

Pre-test and test-retest of a questionnaire assessing energy balance-related behaviors and their determinants among Norwegian adolescents

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Master's Thesis
Department of Nutrition
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UNIVERSITY OF OSLO
November 2020

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2020

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Abstract

Background: Overweight (OW) and obesity (OB) during childhood and adolescence are major risk factors for developing lifestyle-related diseases as adults. Adolescent OW/OB vary according to socioeconomic status (SES) and is influenced by energy-balance related behaviors (EBRB) and the determinants associated with these behaviors. However, little is known about the factors that mediate socioeconomic differences in EBRB and OW/OB. Uncovering this requires using measurement instruments that have been shown to be valid and reliable.

Objective: The aim of this thesis is to aid in the development of the TACKLE cross-sectional study questionnaire by evaluating the content validity, internal consistency reliability and test-retest reliability of items assessing EBRBs and associated determinants among a sample of Norwegian 7th graders.

Methods: Adolescents attending the 7th grade were recruited from public primary schools located outside Oslo. The questionnaire content validity was evaluated by pre-testing the questionnaire (n=28) followed by a cognitive interview (n=10). Reliability was assessed in a test-retest study two weeks apart (n=83). Intraclass correlation coefficient (ICC), Cohen's Kappa and percentage agreement were used to calculate test-retest reliability, while Cronbach's alpha was used to assess internal consistency reliability.

Results: The participant sample in the test-retest study was characterized by high SES according to levels of parental education. Cognitive interview findings showed that participants understood the questionnaire as intended; however some items were reported as hard to understand due to lack of information and use of complicated language. The majority of dietary behaviors, intra-, and inter-personal determinants showed good to excellent test-retest reliability as measured by multi-item scales. For single-item measures of intra-personal and inter-personal determinants, 40% showed good to excellent test-retest reliability, while the remaining single-item measures showed poor to moderate test-retest reliability. Perceived environmental determinants showed moderate to good test-retest reliability for all six single-measure items and multi-item scales and the newly developed measure of perceived

availability of food outlets. Internal consistency reliability was acceptable or higher for the majority of the included multi-item scales.

Conclusions: The findings of this methodological study show that items assessing EBRBs and associated determinants had satisfactory content validity, internal consistency reliability and test-retest reliability among a sample of high-SES Norwegian 7th graders.

Acknowledgements

The present work has been conducted at the Department of Nutrition, Faculty of Medicine at the University of Oslo. This thesis is the end result of a process that could not have been completed had it not been for the help and support by a lot of people whom all have my sincerest gratitude.

First and foremost stand my supervisors Mekdes Gebremariam and Nanna Lien, who allowed me a small glance into their world by selecting me to work on this project. Without their infinite patience, understanding and guidance I would not be where I am today. I am enormously grateful for all their encouragement, their time and all the feedback I have received throughout this process. Thank you to all the members of the TACKLE research group for your help conducting the pre-testing and test-retesting studies.

I must also express my deepest gratitude towards my girlfriend Nina. Thank you for reviewing my work, for kicking my ass when was necessary and for keeping me sane. I could not have done this without you.

My thanks go to Daniel Bieniek for your suggestions and valuable feedback during the writing process, and to Isaac Asimov and Hari Seldon for showing us how far we can reach if we dare to dream. Thank you to Tommy Moum and Helge Flakstad for paving the road leading to this point and giving me the tools I needed to walk down to it.

My thanks go out to my friends and my family for their feedback and support during this year, especially to my mother Trine for assisting me with the final layout of this thesis.

Last but not least I would like to thank myself for deciding to venture down the path towards a Master's degree in Clinical Nutrition all those years ago.

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1 Introduction

1.1 Thesis focus

This thesis is written as a part of the research project “Tackling socioeconomic differences in weight development among youth: assessing trends, mechanisms and potential interventions” (TACKLE) study. The TACKLE study is conducted at the Department of Nutrition at the University of Oslo from 2018 to 2022 and aims to assess trends and mediators of socioeconomic differences in body weight from birth to 14 years of age.

The project is composed of 3 sub-projects. Sub-project A consists of secondary data analysis from the Norwegian Mother and Child Cohort Study (1). Sub-project B consists of a qualitative survey and an adaptation and reliability and validity assessment of a virtual audit tool to objectively assess the food and activity environments of youth. Sub-project C uses a multilevel cross-sectional survey aimed at gathering data from adolescents attending the 7th grade in a total of 30 schools in Oslo across different socio-economic status neighborhoods, combined with an objective mapping of the neighborhood food and activity environments.

This thesis is conducted as part of sub-project C, and focuses on the pretesting and test-retesting of the questionnaire that will be used to collect data of energy balance-related behaviors (EBRB) (2) and their determinants among Norwegian adolescents.

Sub-project C focuses on exploring mediators of socioeconomic differences in dietary behaviors, sedentary behaviors, physical activity, and body weight among youth, with a focus on the neighborhood, food environment and physical activity environments. While the focus is on neighborhood food and activity environments, individual and family-level mediators are also included to adjust for these mediators when exploring neighborhood level mediators.

While the TACKLE questionnaire will gather data on behaviors and determinants of behaviors related to both dietary behavior, physical activity (PA) and sedentary behavior (SB), this master’s thesis will mainly focus on dietary behavior section of the questionnaire. due to time constraints.

1.2 Epidemiological development of Overweight and Obesity

The continued global spread of overweight/obesity (OW/OB) is an ongoing challenge to public health. The number of people having OW/OB today has doubled compared to 40 years ago (3), and the number of children and adolescents with overweight and obesity has increased tenfold in the same period of time (4-6).

OW/OB during childhood or adolescence is associated with a wide range of adverse health outcomes. These health outcomes range from negative health image and psychosocial consequences on the short term, to an increased risk of developing metabolic syndrome, type 2 diabetes and insulin resistance, obstructive sleep apnea, hypertension, nonalcoholic fatty liver disease, and increased risk of developing cancer, in the long term. (7-10). There appears to be a dose-response relationship between the degree of OW/OB and adverse health effects (11-13).

Norwegian children and adolescents are no exception to this trend. From 1993 to 2000 the number of Norwegian thirteen year-olds with OW/OB increased from 7.5% to 11.5% (14), and in 2012 every 6th Norwegian middle-schooler had overweight (15). In addition, both international research (16-18) and Norwegian studies (15, 19-21) have found that children and adolescents of families with lower socio-economic status (SES) are at higher risk of developing OW/OB compared to children and adolescents from families with higher SES. A 2011 review indicated that while the total increases in adolescent OW/OB globally were appearing to stabilize and taper off, rate reduction in OW/OB varied significantly by SES (22). Adolescents from higher SES families had lower prevalence of OW/OB while adolescents with lower SES or migrant status increased in bodyweight. Lower levels of parental education, foreign nationality and higher levels of parental bodyweight were found to be factors strongly associated with overweight and obesity in children and adolescents (23-25).

Behaviors and practices related to OW/OB learned early in life (26-28), including childhood and adolescent OW/OB itself (29-32), track from childhood into adulthood, making the focus on children and adolescents critical.

1.3 Drivers of overweight and obesity

Understanding what drives the development of OW/OB requires knowledge of which behaviors are involved in maintaining a caloric surplus over time (33-35) and how these behaviors are influenced.

A report from the Norwegian Directorate of Health on prevention and treatment of overweight and obesity in children (36) suggests that the most common causes of OW and OB among children are unhealthy dietary behaviors, low levels of physical activity (PA) and long periods of time spent daily on TV and other screen-related sedentary behavior (SB). These behaviors are found to play a major role to non-communicable diseases (37), as well as being important correlates in the fight against childhood and adolescent OW/OB (38).

1.3.1 Dietary behaviors

Diet has long been recognized as playing an important role in both promoting health and reducing the risk of developing chronic non-communicable diseases (NCDs) (37, 38). Fruits and vegetables are nutrient dense food items high in vitamins and minerals, as well as phytonutrients, antioxidants and fiber (39). Dietary patterns containing higher intakes of fruits and vegetables have been shown to protect against diseases such as diabetes and cancer, as well as protecting against the development of both obesity and metabolic syndrome (40, 41).

Processed foods are energy-dense and often contain high amounts of unhealthy types of fat, salt, sugar, highly refined starches and low amounts of high quality dietary protein, micronutrients and dietary fiber (42, 43). Sugar-sweetened beverages (SSB), such as soft drinks and cordial, contain high amounts of refined sugars, and low amounts of other nutrients. Higher intakes of SSBs lead to an increase in fat mass and body weight (44-47). Dietary patterns containing lower intakes of fruits and vegetables and higher intakes of processed foods eaten outside of the home (48) are associated with an increased risk of developing overweight and obesity among children (49, 50) and adolescents (45, 51-53).

Dietary behaviors can be measured using a different measurement methods depending on the research questions that needs answering (54, 55) and the resources available. One of the most commonly used tools for doing so in nutritional epidemiology are food frequency questionnaires (FFQs) (56, 57).

A FFQ is a closed retrospective method used to evaluate dietary habits for a sample population for a particular period of time. It usually consists of a structured list of dietary items and a frequency response section where participants indicate their perceived food intake frequency, ranging from over the past few days to over the past year (58).

One drawback to using FFQs is the possibility of bias, as participants tend to either underestimate the quantity of foods they consume or overestimate intake of certain food items and report reduced intake of others in order to appease the rater (59). Accurately remembering food intake might also prove challenging for younger children, especially regarding food eaten a long time ago.

1.3.2 Physical Activity and Sedentary Behavior

Physical activity is defined as any bodily movement produced by skeletal muscles and which requires energy expenditure (60) and covers a wide range of behaviors including work, leisure time, sports participation and transportation (2). Physical activity is recognized as highly beneficial to overall health, and is associated with a reduction in risk of cardiovascular disease (CVD) and certain types of cancer (61, 62), as well as and a contributor to maintaining weight stability(61).

Sedentary behavior is defined as any waking behavior characterized by an energy expenditure less or equal to 1,5 metabolic equivalents (METs) while in a sitting, reclining or lying posture (63). Examples of sedentary behavior are watching television, sitting still, lying down, reading or playing video games, with television use being an often investigated type of sedentary behavior (64). A higher amount of screen time is associated with negative health behavior for children and adolescents, particularly in regards to obesity and an unhealthy diet (65). High levels of sedentary behavior, especially on a daily basis, increases the risk of weight gain (66).

1.3.3 Identifying the behavioral drivers of OW/OB

To identify the drivers of these behaviors the TACKLE study group developed a conceptual framework based on ecological models of health behavior (67) and the ANGELO framework (68) to categorize factors affecting OW/OB.

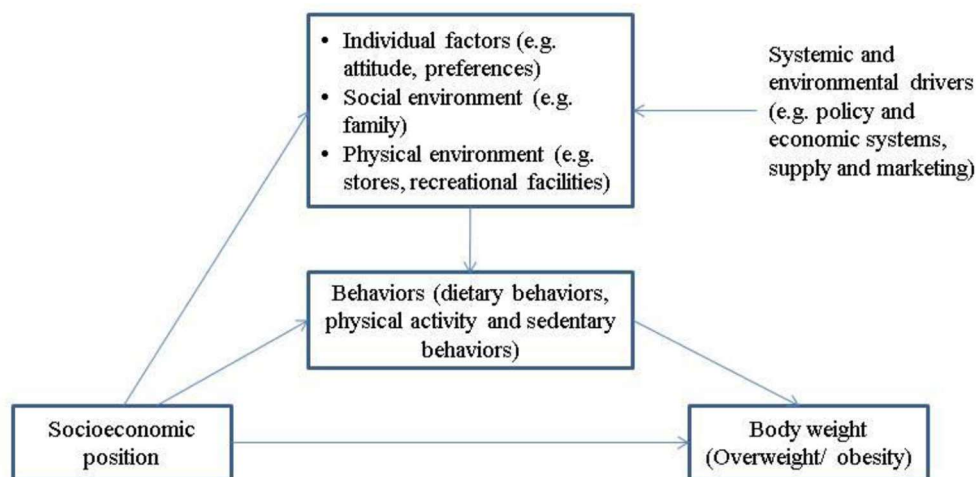


Figure 1. TACKLE Conceptual framework of factors affecting OW/OB.

According to the ecological models of health behavior by Sallis et al the behaviors of individuals are influenced by the environments those individuals reside in (67).

The properties of these environments can affect individual behaviors differently and can be organized into a structural hierarchy according to their proximity to said behaviors. From intra-personal factors (like belief in one’s own abilities) to interpersonal (which includes sociocultural factors like parental norms and behavior and peer influence), to organizational (schools promoting healthy dietary habits or having access to organized sports), community, physical environment (accessibility of food stores, or availability of areas for being physically active) and public policy (rules on marketing to children, pricing levels of fast food etc.)

These factors, or determinants, are assumed to be independent and to be able to interact with each other (69), and in this manner produce complex multifactorial effects on EBRBs and bodyweight.

1.3.4 The determinants of EBRB

According to Bauman (70), determinants are “most appropriately defined as causal factors, and variations in these factors are followed systematically by variations in (physical activity) behavior”. Bauman further asserted that the typical use of “determinant” was flawed, as it had mainly been used to describe “associations of predictive relationships”, or correlational relationships, and not causal ones. He suggested that factors that describe “associations of predictive relationships» should rather be called “correlates”.

As epidemiology is “the study of the distribution and determinants of health related states or events in specified populations “(71), not all determinants under investigation will be causal in nature, and not all study types are able to uncover causal relationships. Cross-sectional studies, like the TACKLE subproject 3, give correlational data, while longitudinal studies give data better able to describe causal relationships. In this thesis the term “potential determinants” will be used when referring to correlates, as a causal relationship between selected potential determinants and behavior is assumed to exist. A mediating variable, or a “intervening causal variable” (70, 72) is a variable that can be used as an explanatory bridge to cross the gap between the exposure variable and the outcome , and thus explain the causal relationship between the two. The potential determinants included in this thesis are included because they are assumed to be potential mediators of socioeconomic differences in the EBRBs included in this study, based on the findings of a systematic literature review conducted as part of the TACKLE study (73), but also include potential mediators less consistently explored in the literature.

1.4 Questionnaire development

The TACKLE questionnaire was developed according to the 6 steps outlined in De Vet et al (74). Questionnaire development described in step 1-4 (74) was performed by other members of the research group before the work described in this thesis began. Step 1-4 encompassed determining the behaviors and potential determinants that were of interest, identifying the target population and which methods to use to gather data, how the factors of interest were to be measured and which items to include. Extensive literature review, a systematic review conducted as part of the project and a qualitative study conducted as part of the TACKLE project were used to determine behaviors and potential determinants to be included in the study. Expert opinion was also used through repeated meetings of the research group to discuss and evaluate the questionnaire. Once agreement is reached, the project moves on to the next step.

Step 5 consists of pre-testing the questionnaire on a sample of participants similar to the population intend to be recruited for the main study. The purpose of pre-testing is to determine if the items included in the questionnaire draft are relevant to the topic at hand and whether the response options covers the entire range of the included constructs. It enables researchers to see if the items are understood by participants the way researchers intend them

to. This step furthermore allows measuring how much time participants need to complete the questionnaire and gives insight into the suitability of the language used to frame included items and concepts. When pre-testing is completed, then the questionnaire is subject to further changes and refinements. This step will be detailed further in section 3.3.

Adjustments are then made to the questionnaire based on the result of the pre-test study. When the pre-test and its refinement are concluded, the process moves on to step 6. This step consists of quantitatively field-testing the questionnaire to assess the ability of the measures included in the questionnaire to repeatedly produce consistent data on a larger sample of a population as similar to the target population as possible.

1.5 Measuring Determinants

Accurate measurement of potential determinants can be complicated, as some determinants can be hard to observe directly. An unobservable determinant under investigation by a measurement instrument is referred to as a construct (75). Instruments aimed at measuring constructs requires the use of a theory or a theoretical model indicating how the potential determinant should work, and what item scores one would expect the instrument to be able to produce, given that the theory or the theoretic model is true (74).

The standard procedure is to use multi-item measurement instruments, where each individual item (question) attempt to capture an aspect of the construct, with either a formative or a reflective relationship existing between the items and the construct (74). The relationships between the scores the items generate can then be used to give data on the relationship between the construct or constructs and the instrument in relation to the underlying theory. This data can be summarized in 3 ways (67, 74), depending on the number of dimensions the construct is assumed to be composed of and the assumed relationship between the dimensions and the construct; indexes, profiles and scales. An index is a composite score composed of multiple items measuring multiple dimensions, a profile is composed of multiple items measuring multiple dimensions, with each dimension receiving an individual score. A scale is a composite score where multiple items attempt to measure the same dimension of a specific construct (76).

1.5.1 Measurement error

The risk of measurement error must be taken into account when aiming to measure determinants. According to Classical Test Theory (67) the measured values that a particular item produces are assumed to consist of two parts; the “true” value, which is the value that is objectively true for that participant for that item at that particular point in time, and measurement error. Together these combine to form the “observed” value. Measurement error is generally divided into two parts; random error and systematic error (77). Random errors are errors in measurement that lead to inconsistent results when measuring constant objects, that average out when a large enough sample size is obtained (78). Systematic errors result in deviations away from the true value in a particular direction; they are more nefarious than random errors as they remain constant regardless of changes in sample sizes (79, 80).

Many factors related to the implementation of measurement processes can affect measurement errors. If items are formulated using language unfamiliar to the participants, the risk of erroneous responses increases. If items are presented without enough context, selecting the proper response option becomes harder. If response options do not cover the construct fully, valuable data might be lost. If response options are not ordered correctly or not using a logical progression, this might make grading responses accurately harder. If repeated tests are performed too close to each other, participants might remember what they answered previously, and if they are spaced too far apart, the construct under investigating might change in the meantime. Taking these considerations into account requires considerable planning and testing during instrument development.

The larger the potential for measurement error, the less reliable the observed values can be assumed to be as a result. The validity and reliability of the measurement instrument must be assessed to ensure that the amount of measurement error is as small as possible, and that the items included are related to the chosen construct so that good data might ultimately be produced.

1.5.2 Validity

Validity refers to the ability of a measurement instrument to accurately measure the variable it is intended to measure (75). This means establishing that the items and associated response categories included are relevant to the construct. The items must be written clearly and

presented in such a way that the intended target population will correctly identify what the item asks for and understand how to mark it correctly. If the instrument fails to capture the construct sufficiently, data loss becomes probable, and conclusions based upon such an instrument are likely to be flawed. It is important to underline that validation is a continuous process. As items and scales can be adopted from multiple instruments, as indeed is the case in this thesis, a validation is always specific to the items used, the latent variable of interest and the corresponding theoretical model employed.

Types of validity

Three main types of validity exist; criterion validity, construct validity and content validity (75). Criterion validity refers to comparing a measurement instrument and the data it produces to a golden standard, and the degree to which the former agrees with the latter. When there are no golden standards available to compare the instrument against, construct validity might be used instead. Construct validity refers to whether an instrument produces data similar to what other instruments have produced previously under similar conditions. This thesis will focus on assessing content validity.

Content validity refers to whether a measurement instrument is able to properly capture the construct of interest and if the instrument manages to capture the entire range of the construct (75). Assessing content validity is done by evaluating the information known about the construct, the contents of the measurement instrument and whether the former corresponds with the latter. It involves combining experts in the field along with the intended users of the instrument to evaluate if the included items are relevant for the participant population for the setting the study is conducted in according to a theoretical framework to see if all aspects of the construct under investigation are covered by the included items. Face validity is a subset of content validity that subjectively assesses whether the instrument appears able to capture the construct of interest. It consists of a first assessment of the impression the instrument makes. Face validity is normally assessed during measurement instrument construction by the researchers who intend to use it. If the instrument passes assessment of face validity it is then subject to further review and development.

Cognitive interviewing

Cognitive interviewing is a research method used to improve the quality of a measurement instrument by asking a group of participants representative of the target study population to interact with the instrument and map their responses while they are doing so (81). It is defined by Willis as “A psychologically oriented method for empirically studying the way in which individuals mentally process and respond to survey questionnaires.” (82). Using cognitive interviews allows analysis of whether participants are interpreting items as intended and uncover the presence of items that are unclear or badly designed. Such items could, if left uncorrected, lead to findings becoming misinterpreted and ultimately contribute to flawed conclusions

Cognitive interviews use two main techniques to help researchers learn more on how participants experience a phenomenon; “think aloud interviewing” and “verbal probing” (82). The first is a process where participants are asked by the interviewer to describe their thought process in detail as they interact with a particular topic or item.

This version of cognitive interviewing allocates the interviewer to a more passive role, with the main purpose of keeping the participant talking while the interviewer records what is being said. Verbal probing requires the interviewer to take a more active role in the interview, by asking the participant specific probe questions to elicit responses containing greater levels of detail than what normally would be provided by the participant during a “think aloud” interview (82)

1.5.3 Reliability

According to the COSMIN initiative reliability is generally defined as “the degree to which the measurement is free from measurement error.” (75). The extended definition further includes “The extent to which scores for patients who have not changed are the same for repeated measurement under several conditions” (75).

Reliability refers to the ability of a measurement instrument to produce consistent results when repeatedly measuring a particular object under a specific context. Reliability relates to validity in that reliability is a necessary, but insufficient condition for validity (81). Just because an instrument shows high reliability does not guarantee that the instrument therefore

measures the object it is intended to measure. A low reliability can therefore be used as a limitation on the upper range of validity in an instrument.(83-85)

Reliability can be categorized into two main groups: external consistency reliability and internal consistency reliability. It can be measured in different ways depending on the instrument one wants to employ, the participants one wants to recruit, the context the measurement instrument is employed in and the constructs under investigation (86)

External consistency reliability

Assessing external consistency reliability means comparing one set of measurements to another ,separate ,set of measurements (87). There are 3 main categories of external consistency reliability: inter-rater reliability, inter-method reliability and test-retest reliability.

- 1) Inter-rater reliability measures the degree to which multiple raters produce consistent ratings when evaluating the same participant(s) under identical conditions.
- 2) Inter-method reliability evaluates the degree to which independent measurement instruments constructed using the same method for the same purpose produces results consistent with each other.
- 3) Test-retest reliability measures the degree to which a single measurement instrument produces consistent results when performing repeat measurements of the same object under identical conditions across multiple points in time.

The implicit assumption of test-retest studies is that that if testing is done correctly, then the construct that is being measured does not change. If the construct does not change, then any changes in mean scores from test to re-test would have to be attributed to the ability of the instrument to be influenced by measurement error, or in other words the reliability of the measurement (88) Time between measurements therefore represents an important source of potential measurement error in test-retest studies. If the time period between tests are too short the probability of participants remembering the answers they gave previously increases, and if the time period between tests grows too large it becomes more likely that the construct under investigation changes. For this reason test-retest reliability studies are normally designed to have a period of 10-14 days between tests (76).

Three commonly used methods in health research to assess test-retest reliability for non-categorical variables are the Pearson product-moment correlation coefficient (PPMCC), also known as Pearson's r , Spearman's Rank-Order Correlation Coefficient (SROCC), or Spearman's ρ , and Intra-Class Correlation (ICC). For categorical variables Cohen's Kappa and Percentage agreement can be used.

Pearson's r describes the linearity of a correlation between two paired variables following a linear relationship (89). It does not consider any systematic differences between these variables. The Intra-class Correlation (ICC) statistic groups variables together by pooling the means and standard errors of each individual variable, in this case the individual test responses, and lets us quantify both the mean scores of each test response class and to describe the changes between the two (89, 90). ICC ranges from 0 to 1, with a higher value indicating that the two groups or classes share a large degree of variance. (91). It can be used for many different study types depending on study design, so selecting the correct ICC type and clearly identifying which method that was used is important for high quality reliability analysis (89-91).

The ICC statistic relies on item responses being heterogeneous in nature in order to properly show statistical differences between groups (92). If ICC is calculated using items that produce very homogenous data, i.e. a dietary habit under investigation is reported by very few or a very many individuals of the total sample then ICC will yield artificially low reliability estimates. In these cases, one method that can be used to supplement the ICC is percentage agreement. (92)

Percentage agreement is a simple measure of the ratio of repeat scores with identical values compared to the total number of scores. Due to its simplicity it is not able to detect overlap due to chance, and as such it should be reserved for evaluating the reliability of continuous variables only in cases where the sample homogeneity is too large for ICC to be able to produce meaningful data. Percentage agreement ranges from 0 to 1, with 0 indicating no agreement and 1 indicating complete agreement.

Cohen's kappa, symbolized using the lower case Greek letter κ is a statistical method for measuring reliability for categorical variables adjusted for agreement due to chance (93).

For the statistical cutoffs used for ICC, percentage agreement and Cohen's kappa, see section 3.6.3.

Internal consistency reliability

When assessing internal consistency reliability one evaluates if a group of items, all located inside the same instrument, all administered to the same participants and all attempting to measure the same construct, produce consistent results when measured against each other. Depending on the conditions of the test, internal consistency reliability can be measured in multiple ways.

Cronbach's alpha (α) is a method used for analyzing internal consistency reliability of singular scales (94). It assesses how much of the variance in a scale stems from natural variance in the construct itself and how much stems from measurement error. A high alpha indicates that the included items produce answers that are similar to each other. If the alpha is too low this can either stem from too few items being included, or that the internal consistency reliability between items is low.

Using Cronbach's alpha correctly requires that the implicit assumptions of Cronbach's alpha are fulfilled. These are a: that the construct under investigation is unidimensional, b: tau-equivalency, or that all factor loadings are equal, and c: that the measurement errors related to each item are independent of one another (95). Because Cronbach's α assumes that the construct is unidimensional, the statistic is not able to detect if this is actually the case. Calculating Cronbach's alpha on items measuring multiple constructs can therefore artificially inflate its value. In addition the size of Cronbach's α is influenced by the number of items included in the scale, with a larger item pool yielding a higher alpha and a smaller item pool producing a smaller alpha, as shared variance will decrease as the total amount of items increase (94). Lastly Cronbach's alpha is based on tau equivalency, or equal factor loading, which means it assumes that each item captures equal amounts of the same construct. If this is not the case then Cronbach's alpha will underestimate the reliability of the scale (96). For the statistical cutoffs used for Cronbach's alpha, see section 3.6.3.

1.6 In summary

When seeking to change health behaviors, we want to maximize the impact of the intervention (97). In order to do so it is imperative to understand which factors play a role in shaping, enabling or limiting the behaviors the intervention intends to address. EBRBs and their determinants are accepted as valid intervention targets to address childhood and adolescent OW/OB, but data on how variations in SES mediate differences in adolescent bodyweight is as of yet unclear (98).

According to the Determinants of Diet and Physical Activity (DEDIPAC) Knowledge Hub (99), a considerable knowledge gap on determinants affecting EBRB exists, and these gaps are widened by inconsistencies in the research methodology that has been used.

Inconsistencies are found in terms of variations in study design, measurement methods, measurement design, determinant selection and overall a lack of validated measurement tools. EBRBs have been shown to vary according to socioeconomic position, as adolescents with lower SES has a greater risk of developing OW/OB than adolescents with higher SES.

Developing instruments to uncover how SES affects the risk of developing OW/OB is therefore an important step in addressing this issue. Tools intended to help explain this relationship must be shown to be valid and reliable to ensure that the findings they produce lead to effective interventions.

The aim of this thesis is to evaluate the content validity, internal consistency reliability and test-retest reliability of the TACKLE questionnaire on EBRBs and their determinants.

2 Thesis purpose

The purpose of this master's thesis is to aid in the development of the TACKLE study cross-sectional questionnaire by conducting a pre-test and a test-retest of the questionnaire on a group of Norwegian 7th graders attending schools located outside Oslo. The aim is to assess content validity, internal consistency reliability and test-retest reliability.

2.1 Research questions

The research questions asked in this thesis are the following:

- 1) Are the adolescents' understanding of the questions on EBRB and their determinants in line with what the questions should measure?
- 2) What is the internal consistency of determinants measured by multi item scales?
- 3) What is the test-retest reliability of the measures of dietary behaviors and the associated determinants?

2.2 Ethical considerations

This masters' thesis was conducted in accordance with the Declaration of Helsinki (100). Based on an agreement with the University of Oslo, The Norwegian Centre for Research Data AS (NSD) has assessed that the processing of personal data in this project is in accordance with data protection legislation (project reference number 675092) ##vedlegg 1. All parents of participating children provided written consent. The gathered data was anonymized, and it is not possible to identify individual participants or schools based on the results in this thesis. The ID-key linking the names of participants and participation ID numbers and the schools involved are stored separately from the questionnaire data ,which is kept in secure digital storage at the University of Oslo (101). No conflicts of interest are declared.

3 Methods

3.1 Study design

This study is an observational methodological study using a cross-sectional design and convenience sampling.

3.2 Recruitment

Participants consisted of adolescents attending the 7th grade in public schools outside Oslo municipality, located in the south-eastern part of Norway. Recruiting for both pre-test and test-retest was conducted from September to December 2019.

Schools were assessed according to socioeconomic and ethnic diversity data of the inhabitants in the areas surrounding the schools. Data obtained from Norwegian Bureau of Statistics records and were used as a proxy for student diversity compositions to improve the odds that the sample in this study would be similar in terms of socioeconomic and ethnic diversity to the intended sample in the main TACKLE study (102-104).

Primary school principals in Bærum, Asker, and Drammen municipality was e-mailed by research staff, informed of the project, and asked to participate in the study. One school, in Bærum municipality, was contacted about pretest participation by a member of the TACKLE group and the school agreed to participate. Eleven schools in total were contacted regarding participation in the test-retest study; three schools in Bærum municipality agreed to participate, three schools in Bærum municipality declined to participate, and four schools, two in Bærum, one in Asker and one in Drammen did not respond. The last school, also located in Drammen, responded by requesting all recruitment inquiries be directed to municipality administrators, who, on behalf of all 14 primary schools in Drammen municipality, decided that no school located in Drammen municipality would be allowed to participate. Information material describing the study and parental consent forms was sent to school principals, parents, and the adolescents a week before the tests were scheduled to take place. Parents were asked to provide the education of the highest educated parent or guardian available when filling out the parental consent forms.

3.2.1 Exclusion criteria

To avoid adolescents participating in both the methodological study and the main study, only schools located outside Oslo were eligible for inclusion. Schools not offering a 7th grade, schools with a non-standard educational profile like Montessori schools, Steiner schools and International (IB) schools, as well as private schools and schools for those with special needs, were not eligible for inclusion.

3.3 Included measures

The questionnaire was developed on an online questionnaire platform hosted by the University of Oslo (105). The questionnaire used for the pre-test contained 90 items, which was reduced to 78 items for the test-retest study. Items were divided into six main sections: sociodemographic variables, physical activity related items, neighborhood environment related items, dietary behavior related items, sedentary behavior related items and sleep related items.

Most measures were taken from or adopted/modified from previous studies, including the measures of dietary behaviors (106-109) and their determinants (110-117). Some of the measures were newly developed for this study: accessibility of fruit and snacks at home, accessibility of food in neighborhood stores, accessibility of food outlets, spending on food and perceived attractiveness of fast-food outlets. A qualitative study, which has not yet been published, informed the inclusion and development of some of these latter measures.

The sociodemographic variables and dietary behavior related items will be described further.

3.3.1 Sociodemographic variables

Gender was assessed using a question with a binary response option (girl/boy). Age was quantified by asking for year and month of birth. Ethnicity was determined by asking if the participant was born in Norway and where the participant's parents were born. If the participant answered that they were born in another country, then a follow-up item would appear and prompt the participants to select the continent where he or she had been born. Parental ethnicity was determined in the same manner. Habitation status was documented by asking the participants about which adults they lived with, with response categories ranging

from “Two adults/parents all the time” to “sometimes with my mother/sometimes with my father” and “other adults”. Parental educational status was obtained by asking parents to self-report the amount of years they have received formal education, with response categories ranging from <7 years to >16 years. Unreported parental education was grouped as missing.

3.3.2 Dietary Behaviors

Intake of sugar-sweetened soft drinks (referred to as soft drinks), carbonated sugar-sweetened soft drinks containing caffeine and other stimulants (hereby referred to as energy drinks) and sugar-sweetened non-carbonated beverages based on fruit juice concentrate (hereby referred to as cordials) was assessed.

Response categories for soft drinks was split into 3 common intake sizes: 0.25l glasses, 0.33l cans and 0.5l bottles (with picture illustrations). Response categories for energy drinks was split into 2 common intake sizes: 0.25l cans and 0.5l cans. Cordial intake was measured using 0.25l glasses. Weekday intake was assessed using two items, one estimating intake frequency, ranging from no intake to drinking soft drinks all 5 weekdays, and one item measuring the number of units consumed per occasion, ranging from zero units to 5 or more units.

Weekend day intake was determined with one item asking for the total number of items consumed during the entire weekend, with intake being quantified using the same intake sizes as for the week. Total weekly intake was estimated by combining weekday and weekend day intake.

Intake of fruits and vegetables (both cooked and raw) was assessed using frequency items with 8 response categories, ranging from never/rarely to 3 times or more per day.

Intake of snacks (categorized as salty snacks, sweet snacks, and baked goods) were assessed using three frequency items with 7 response categories, ranging from never/rarely to 2 times or more per day. Total snack consumption frequency was obtained by adding all item responses together.

Total weekly breakfast frequency was obtained by measuring weekday and weekend breakfast frequency separately and adding them together. Weekday breakfast frequency was measured using a single item with 6 response options, ranging from never to 5 days a week. Weekend

breakfast frequency was measured using a single item with 3 response options ranging from never eating breakfast during the weekend to eating breakfast both weekend days.

Fast-food intake was measured using two items. One item assessed fast food consumption during the last 7 days, and used 8 response categories, ranging from having eaten fast food 0 of the last 7 days to having eaten fast food 7 out of the last 7 days. The other item assessed fast food consumption on average, with 7 response categories, ranging from never/rarely to 2 or more times per day.

3.4 Potential determinants

Most potential determinants were measured using a 5-point Likert type scale (1= totally disagree, 3= neutral, 5= totally agree).

3.4.1 Individual and interpersonal factors

Self-efficacy towards healthy foods

For the four-item self-efficacy scale respondents were asked to rate their confidence in their ability to choose to eat healthy foods when provided a choice. (*e.g. I find it difficult to choose low fat foods. (for example, fruit instead of potato chips, or skim milk instead of whole milk.)*)

Parental rules

Parental rules related to the consumption of different food items were assessed using one item for each dietary behavior assessing the extent to which limits were set for the consumption of the particular food item. (*e.g. My parents place clear limits on the quantity of sugary beverages (soft drinks, juice etc.) I am allowed to drink.*)

Parental rules for breakfast consumption was measured using the item *My parents have rules about whether I should eat breakfast.*

Parental norms

Parental norms were measured using two items per parent: *My mother/father thinks I should eat healthy* and *My mother/father is a healthy eater.*

Parental modeling

Parental modeling of the different included dietary behaviors was measured using five separate questions for each parent, and asked participants to rate how often each parent ate foods belonging to a specific food item category. (*e.g. My father eats vegetables every day, or My mother drinks sugar-sweetened soft drinks several times a week.*)

Accessibility of foods and drinks at home

The accessibility of vegetables at home scale consisted of four items (*e.g. At our home we usually have vegetables for dinner every day.*)

The accessibility of sugar-sweetened soft drinks scale consisted of three items (*e.g. At home there is usually sugar-sweetened soft drinks available during dinner on weekend days.*)

The accessibility of fruits scale consisted of four items (*e.g. At home I think it is easy to find and eat fruit.*)

The accessibility of snacks scale consisted of 2 items and asked participants to estimate the accessibility of salty snacks, sweet snacks, and baked goods at home. (*e.g. At our home it is usually easy to find sweet and salty snacks. (for example, Chocolate, candy, ice cream, potato chips, etc.)*)

The accessibility of breakfast scale consisted of two items (*e.g. At home it is almost always easy for me to find breakfast food.*)

Food purchasing frequency and spending

Food purchasing frequency was assessed by asking participants how often they purchased food or drinks in stores around their school/neighborhood per week, with response options ranging from “There are no stores” to “Every day”.

Food spending quantity was assessed by asking how much money participants used per week to purchase food and drinks for themselves, with response options ranging from “I spend no money” to “More than 200 NOK”.

3.4.2 Perceived environmental determinants

Perceived availability and accessibility of food outlets

Items assessing the availability of food outlets asked respondents to quantify the estimated travel time between their home and different food outlets (*e.g. How long time would it take for you to walk from your home to the closest type of place mentioned below?*). The type of food outlets included were kiosks (for example Narvesen or 7-11), supermarkets, fruit and vegetable stores, shopping malls, fast food stores (for example McDonalds, Burger King), café, and restaurant. The response options ranged from “1-5 minutes” to “31 minutes or more” and “I do not know”. As this scale included a “I do not know” response option, which could be interpreted in multiple ways, it was calculated using both ICC and Kappa. The ICC version assumed that if the participant responded that he or she did not know the length of the walking distance, then it was likely to be longer than “31 minutes or more”, and this response option was then recoded into the “31 minutes or more” response option. This recoding was suggested in the study from which the measure was taken(116). A secondary version kept the “I do not know” as a separate response option, but as the size of this variable could not be quantified this made it necessary to treat all response options as categorical variables and to use Kappa as the reliability coefficient.

The accessibility of food stores and of fast-food outlets was assessed using one item for each store. (*e.g. There are fast-food outlets (for example McDonald's) within easy walking distance of my home.*)

Perceived accessibility of food in neighborhood stores

The perceived accessibility of different food items in neighborhood stores was measured by asking participants to rate the ease of obtaining these foods in these stores. (*e.g. It is easy to obtain a large and varied selection of fruits and vegetables that I like.*)

Perceived attractiveness of fast-food outlets

The perceived attractiveness of fast food outlets was assessed using a five-item scale where participants were asked to quantify to which degree they agreed with statements related to fast food outlets (*e.g. I can sit there with my friends.*)

3.5 Pre-test study

3.5.1 Sample size

One school was recruited using convenience sampling for the pre-test (n=28 for the quantitative questionnaire, n=10 for the cognitive interview, 5 boys and 5 girls)

3.5.2 Pre-test procedure

The pre-test was conducted in October 2019. A paper-based version of the questionnaire was printed out and distributed to each participant (n=28). Participants received a verbal explanation of the purpose of the pre-test by the Master's student before the questionnaires were handed out. Participants were instructed to focus on how they understood and interpreted the contents of the questionnaire. This applied both to including individual items, their response categories, and the descriptive text used to explain or provide context to the items and the terminology that was used. Participants were instructed to mark any item containing unfamiliar or complicated language, as well as any items they did not feel they fully understood.

Participants were instructed to raise their hand and signal research staff if they had any questions when they were filling out the questionnaire, and when they were finished. At this point in time research staff would log the amount of time used. Participants were then told to return to any markings they had made previously and add further comments to better illustrate the reason for commenting

Cognitive interview

The purpose of the cognitive interview was to improve content validity by having participants of the same age as the intended participants for the main study discuss their impressions of the questionnaire and to have them provide more in-depth data on any items or areas that were unclear or confusing.

Cognitive interview participants were pre-selected by the teacher without any input from research staff (n=10, 5 boys, 5 girls). All interview participants appeared to be ethnic Norwegians.

In the recess period between pre-test and cognitive interview, the research team summarized the comments from all completed questionnaires and identified the questions that were rated as difficult. After agreement was reached on which items or areas that appeared to be the most frequently mentioned, the cognitive interview was initiated.

Before the interview was started the Master's student informed the participants of the purpose of the cognitive interview; the intent was not to evaluate the habits of those participating, but that participants could help researchers improve the questionnaire by providing detailed feedback on how they experienced and interpreted the questionnaire. Participants were told how data from the interview would be archived and for how long they would be stored, they were informed how their responses would be kept strictly confidential as well as their right to withdraw from the interview at any time. Zero participants withdrew from the interview.

The interviews were conducted in a semi-structured setting and led by the master's student. Participant responses were recorded using a digital audio recorder. Probing was used to examine participants' impressions of and understanding of items, language, concepts, and response options, as well as to go through items previously marked as difficult. Research staff sat nearby to listen and take notes during the interview.

3.5.3 Qualitative analysis and adjustment

Following completion of the cognitive interview the digital records was transcribed by the master student. When transcription was complete, participant responses were categorized according to the information obtained from analysis of the written material and analyzed for fit. In the weeks following the pre-test the questionnaire was adjusted during a series of review meetings by the research group.

Changes included removal of individual items, response options and altering item language. When the research group was satisfied with the state of the questionnaire the test-retest study was initiated.

3.6 Test-retest study

3.6.1 Sample size

The initial goal was to obtain a sample size large enough to evaluate test-retest reliability according to differences in participant SES, but due to low participation rates at the school level the final sample size was approximately 100 participants.

Enrollment numbers in Norwegian schools vary along with parental willingness to provide consent, so schools were continuously recruited throughout the school year until the agreed upon number of participants was reached.

3.6.2 Test-retest procedure

Eleven schools, containing a total of 559 adolescents, were invited to participate in the test-retest, and 3 accepted the invitation. All 157 7th-graders attending these schools were invited, and 90 consented to participate (57% response rate). Of these, 82 (91%) participants participated in both test and retest.

The test-retest study was conducted between November 2019 and January 2020. Teachers were instructed to add a link to the digital version of the questionnaire on the school's IT platform to enable participants to easily access the questionnaire using their school-issued electronic tablets. Participants were given a short explanation of their participation in the project before the test started.

Participants were assigned unique ID numbers based on class attendance lists for both tests. This ensured participant anonymization and that the same participant was given the same ID number on both tests. Participants were instructed to take their time to properly fill out the items according to their own pace, regardless of whether other participants finished faster or slower than them. They were instructed to raise a hand if they needed to contact the research staff while filling in the questionnaire. The second round of the test-retest was scheduled to take place 14 days after the first test and was concluded under equal conditions and using identical procedures. Participants were rewarded with a basket of fruits for their help and participation.

3.6.3 Statistical Analysis

All statistical analysis was calculated using IBM SPSS 22 (Statistical Packages for the Social Sciences, SPSS Inc, Chicago, IL) for Microsoft Windows 10. ICC estimates and their 95% confidence intervals were based on a single-measure rating, absolute agreement 2-way mixed effects model. The statistical software and participant data were stored on the TSD (101) (Tjenester for Sensitive Data) service provided by the University of Oslo, and accessed using VMware Horizon Client for Microsoft Windows 10. Scales including both positively worded and negatively worded items had negative items recoded to enable reliability calculations for scale means.

Descriptive statistics

Descriptive statistics were first conducted to explore the sociodemographic characteristics of the sample. Then descriptive analyses of the dietary behaviors and determinants included were conducted and are presented as means (standard deviations (SD)) or as percentages.

Internal consistency reliability

Internal consistency reliability was assessed using Cronbach's alpha, with cutoffs at $\alpha > 0.7$ defined as "acceptable", and $\alpha > 0.8$ as "preferable" (118, 119). For scale refinement the SPSS "Alpha if item deleted" function was used to calculate the potential changes in Cronbach's alpha if individual items were removed, using the same cutoffs.

Test-retest reliability

Test-retest reliability for continuous items was assessed using ICC. ICC scores were evaluated using the following cutoffs: "excellent" (>0.81), "good" ($0.6 - 0.8$), "moderate" ($0.4 - 0.6$), "poor" (<0.4) (92).

When ICC values were below 0.4 and percentage agreement above 60%/75%/90% , percentage agreement was reported as well (120).

Percentage agreement was evaluated using the following cutoffs: "excellent" (90%-100%), "good" (75-89%), "moderate" (60-74%) and "poor" ($<60\%$) (120).

Cohen's kappa (κ) was used to calculate test-retest reliability for categorical items, with a $\kappa < 0$ indicating "no agreement", $0,01 < \kappa < 0,2$ "none to slight", $0,21 < \kappa < 0,4$ "fair", $0,41 < \kappa < 0,6$ "moderate", $0,61 < \kappa < 0,8$ "substantial" and $0,81 < \kappa < 1,00$ "almost perfect" (121).

Missing data

Only data from participants who attended both test- and retest was analyzed for reliability.

4 Results

4.1 Results of pre-test study

Completion of the 90-question pre-test questionnaire took an average of 45 minutes, with a median of 46 minutes and a range of 29 minutes.

Based on examination of the written commentary from the pre-test questionnaires and the analysis of the cognitive interviews the two main issues identified by participants were lack of information and too complicated language.

While the pre-test, test-retest and associated questionnaires and materiel were written in and communicated to participants in Norwegian, this master's thesis is written in English. For this reason, the presented questionnaire items and participant feedback has also been translated into English. The original phrases reported by participants during the cognitive interview are provided in Norwegian using parentheses. The translations herein are chosen by the author and is to be used for the presentation of this thesis only.

4.1.1 Lack of information

Participants reported that several items were difficult to answer because the items asked for information regarding other people. In these cases the participants indicated that they did not have the information the items asked for.

The example most often mentioned by participants was related to items involving parents and parental behavior. Participants found it hard to estimate both how much time parents used for screen-based activities/time on social media, and what types of foods they consumed, especially in those periods of time where participants were not around to observe their parents.

Parental employment was another example of items cited for lack of information; several participants reported they did not know if their parents worked full time or part time, some reported not knowing what "full time" ("heltid") or "part time" ("deltid") meant, while one individual mentioned that their parents worked from home and were uncertain how this played a role.

Dietary behaviors of friends was another item that participants reported as difficult to estimate, as several mentioned they had no idea what their friends did when they were not around, and one participant said his friends didn't discuss what they ate.

4.1.2 Complicated language

Participants also reported that several items were written in a way that made them too hard to understand. Most of the items that was reported as using complicated language were in the physical activity category.

The definition of "physical activity" ("fysisk aktivitet") included in the questionnaire was reported as both being placed too far away from specific questions and explained using a font size that was too small to read. One participant asked the question "Does sitting on the toilet count as physical activity?" ("Teller å sitte på do som fysisk aktivitet?" when the category was discussed.

When asking participants to estimate how many days out of the last 7 they had been physically active for more than 60 minutes per day, several reported having difficulties counting days backwards linearly across the week. Participants instead suggested that using "last week" ("forrige uke") might be easier to understand.

With regards to socioeconomic factors parental employment was again mentioned, as multiple participants said they did not know what "work situation" ("jobbsituasjon") or "salary situation" ("lønnsituasjon") meant and were unable to explain the difference between "full time" ("heltid") and "part time" ("deltid") when probed.

Regarding neighborhood-related items, participants suggested that the provided definition of "neighborhood" ("nabolag") also needed improvement, as it was hard to locate in the text and that the meaning of the word was not readily available from reading the items where the term was used, or from the supportive text in the questionnaire. In addition, terms like "traffic speed" ("trafikkhastighet") and "crime" ("kriminalitet") were deemed difficult to understand, and one participant reported misreading "hiking trail" ("tursti") as "tourist" ("turist").

With regards to the dietary behavior items, two participants mentioned that they thought that the response option of "less than once per week" ("mindre enn en gang per uke") was unclear.

On the topic of sedentary behavior one participant said that he was confused by items asking for the number of hours he spent on screen-based activities during school hours, as his school had issued electronic tablets to all 7th grade adolescents for the purpose of being used as educational supplemental tools.

4.1.3 Questionnaire modifications

Multiple changes were made to the questionnaire after the pre-test had been completed. Modifications were based on data from the qualitative interviews and research group discussions. After looking at the time the group needed to complete the questionnaire it was apparent that the questionnaire was too long, and needed to be shortened in order to fit within the 45 minute timeframe intended for questionnaire completion in the main study.

Changes included adding explanatory text to the areas indicated as difficult to understand, adjusting definitions to make items easier to answer, removal of certain questions and response options where appropriate, and reformulating response options to improve clarity and understandability. For example, the response option «last seven days» (“Siste syv dager”) was replaced by «last week” (“forrige uke”) and “once every other week” (“en gang annenhver uke”) replaced “less than once per week” (“mindre enn en gang i uken “).

Items assessing water intake and milk intake across weekdays and weekends were also removed as they were determined to be less relevant for the purpose of the study. Items assessing parental employment status were removed. Several items in the physical activity section of the questionnaire were also removed, including those that were least understood and those considered less relevant for the purpose of the study.

Some items, including perception of neighborhood safety and fast food intake, were not modified despite having several unused response categories in the pre-test, because these response categories were assumed to be potentially relevant to the participants in the main study. Apart from the indicated problem areas participants reported a satisfactory questionnaire experience and that the response options provided were relevant to the items. When probed on their understanding of items, participants generally appeared to understand them the way they were intended to be understood.

4.2 Results of test-retest study

Completion of the test-questionnaire took on average 34 minutes (25 minutes for re-test), with a median of 34 minutes (26 minutes for re-test) and a range of 49 minutes (32 minutes for re-test).

4.2.1 Study sample characteristics

Sociodemographic characteristics of participants are shown in **Table 1**. Study participants were on average 13.5 (SD = 0.26) years old. Most participants were ethnic Norwegian (59%), and genders were evenly divided. The majority reported living in a dual-parent household (81.3%), and most had highly educated parents (82.9% with parents with >13 years of education). Levels of parental education were similar across ethnicities.

Table 1: Sociodemographic characteristics of participants in TACKLE test-retest study sample

	N	%
	82	
Age (mean (SD))	13.5 (0.26)	
Sex		
Male (%)	37	45.1%
Female (%)	45	54.9%
Country of birth		
Norway (%)	73	89.0%
Outside Norway (%)	9	11.0%
Maternal Place of birth		
Norway (%)	54	65.9%
Outside Norway (%)	28	34.1%
Paternal Place of birth		
Norway (%)	59	72.0%
Outside Norway (%)	23	28.0%
Both Parents born in Norway	49	59.0%
Both Parents born outside Norway	18	21.9%
Lives together with parents		
Lives with both parents' full time	67	81.7%
Moves between parents in periods	13	15.9%
Lives with only one parent	2	2.4%

	N	%
Parental educational level, all parents*	82	
>16 years (%)	53	64.6%
13-16 years (%)	15	18.3%
10-12 years (%)	6	7.3%
7-9 years (%)	2	2.4%
< 7 years (%)	1	1.2%
Missing	5	6.1%
Parental educational level*, both parents born in Norway	50	
>16 years (%)	33	67.3%
13-16 years (%)	10	20.4%
10-12 years (%)	4	8.1%
7-9 years (%)	1	2.0%
< 7 years (%)	0	0.0%
Missing	2	4.0%

*Parental education information was reported by the parent/guardian for both parents and the highest level of education or the one available was used.

4.2.2 Test-retest reliability of measures of dietary behavior

Table 2 shows mean intakes (at test) and test-retest intraclass correlation coefficients for measures of dietary behavior.

The consumption of soft drinks, energy drinks and cordial were 1.5 liters, 0.13 liters, and 0.76 liters per week respectively. Fruits, vegetables, and breakfast and fast food were consumed on average 8.5, 10.2, and 6.27 and 0.4 times per week, respectively.

Test-retest reliability was good to excellent for five of nine dietary behaviors (55 %) as indicated by an ICC>0.6, and moderate for three behaviors, as indicated by an ICC between 0.4 and 0.6. One dietary behavior (energy drink consumption) did not show enough variability, as indicated by an ICC<0.4 but had good percentage agreement (89%). The highest ICC was found for vegetable intake and fast food consumption (times/week avg) (0.70)

Table 2: Mean intakes and intraclass correlation coefficients for dietary measures

	Mean	SD	ICC	95% CI	% Agr.
Soft drink intake, liters					
Soft drink intake, per week	1.5	1.81	0.65	0.51 - 0.76	
Soft drink intake, per weekday	0.13	0.24	0.49	0.30 - 0.64	
Soft drink intake, per weekend day	0.44	0.4	0.71	0.58 - 0.80	
Energy Drink intake, liters					
Energy Drink intake, per week	0.13	0.41	0.32	0.12	89%
Energy Drink intake, per weekday	0	0.02	0	-0.21 - 0.21	96.3 %
Energy Drink intake, per weekend day	0.03	0.09	0.36	0.16 - 0.54	89%
Cordial intake, liters					
Cordial intake, per week	0.76	1.07	0.63	0.49 - 0.75	
Cordial intake, per weekday	0.1	0.17	0.61	0.46 - 0.73	
Cordial intake, per weekend day	0.12	0.15	0.56	0.39 - 0.69	
Fruit intake average, times / week					
	8.5	6.7	0.48	0.54 - 0.78	
Vegetable Intake average, times / week					
	10.2	8.27	0.70	0.57 - 0.80	
Snacks intake average, times / week					
	3.81	2.43	0.48	0.29 - 0.63	
Salty snacks	1.29	1.61	0.49	0.30 - 0.64	
Sweet snacks	1.62	1.22	0.55	0.37 - 0.68	
Baked goods	0.89	1.03	0.31	0.10 - 0.49	48.1%
Fast food restaurant visits, times/week avg.					
	0.57	0.8	0.56	0.40 - 0.69	
Fast food consumption, times/week avg.					
	0.37	0.58	0.70	0.57 - 0.80	
Breakfast consumption at home, days/week					
Breakfast consumption, weekly	6.27	1.27	0.65	0.50 – 0.76	
Breakfast consumption, weekday	4.37	1.25	0.68	0.55 – 0.78	
Breakfast consumption, weekend	1.86	0.39	0.68	0.55 - 0.78	

SD = Standard deviation , ICC = Intraclass correlation Coefficient, 95% CI =95 percentile Confidence Interval, % agr = percentage agreement.

4.2.3 Internal consistency reliability

Results of Internal consistency reliability analysis for the multi-item scales (at test) are shown in **Table 3**.

Cronbach's α was computed for nine scales. Five out of the nine scales had an internal consistency reliability of acceptable to preferable as indicated by $\alpha > 0.7$, one scale had an α of 0.7, and another had an α of 0.65. The 4-item scale assessing self-efficacy towards choosing healthy food alternatives had an α of 0.55. However, removal of the item assessing the difficulty of choosing healthy foods when with friends resulted in an increase of alpha from 0.55 to 0.66. The lowest α was obtained for the 2-item scale measuring accessibility of breakfast at home, which had a α of 0.61.

Table 3: Internal consistency reliability of multi-item scales measuring potential determinants of dietary behaviors

Scales	Cronbach's Alpha	Alpha if item deleted
Self-efficacy	0.55	
* ...I find it difficult to choose low-fat foods (e.g. fruit rather than chips or "light" milk rather than "full cream" milk)		0.39
... I find it easy to choose a healthy snack when I eat in between meals (e.g. fruit or reduced-fat yoghurt)		0.35
... I believe I have the knowledge and ability to choose/prepare healthy snacks		0.45
*... I find it difficult to choose healthy meals/snacks when I am with friends		0.66
Accessibility of vegetables at home	0.77	
At home we vary the types of vegetables served for dinner during a week		0.66
At home we how the vegetables are prepared for dinner during a week		0.70
At home we usually have vegetables for dinner every day		0.77
At home there are usually vegetables that I like available		0.72
Accessibility of soft drinks at home	0.65	
At home we usually have soft drinks for dinner at weekend days		0.37
At home there are usually soft drinks available		0.38
At home we usually have soft drinks for dinner at week days		0.72
Accessibility of fruits at home	0.77	
At home there are usually fruits that I like available		0.76
At home we vary the fruits available in the house during the week		0.69

Scales	Cronbach's Alpha	Alpha if item deleted
At home I find it easy to find and eat fruit		0.70
Accessibility of snacks at home	0.85	
At home we usually have sweet and salty snacks available		
At home I have almost always had easy access to sweet and salty snacks		
Accessibility of breakfast	0.61	
At home we usually have breakfast foods (bread, cereal, milk) available		
At home I have almost always had easy access to breakfast food		
Maternal Norms	0.92	
My mother thinks I should eat healthy		
My mother is a healthy eater		
Paternal norms	0.87	
My father thinks I should eat healthy		
My father is a healthy eater		
Perceived attractiveness of fast-food outlets	0.70	
The food is cheap		0.76
They sell food I like to eat		0.62
They sell food I can easily share with others		0.59
I can sit there with my friends		0.60
A place many adolescents I know use.		0.62

*Inverted variables

4.2.4 Test-retest reliability of potential determinants

Descriptive analysis results and intraclass correlation coefficients of intrapersonal and interpersonal determinants are shown in **Table 4**, and in **Table 5a** and **Table 5b** for perceived environmental determinants.

Intrapersonal and interpersonal determinants

Test-retest reliability for multi-item scales measuring intrapersonal and interpersonal determinants appeared to be good to excellent in five out of nine scales as indicated by $ICC > 0.6$, moderate in three out of nine scales (33%) as indicated by ICC between 0.4 and 0.6. One out of nine scales had an ICC of 0.33 and showed a moderate percentage agreement (66%). The “Accessibility of fruits at home” scale had the highest ICC (0.77) (**Table 4**).

Four of ten single-item measures had good to excellent test-retest reliability, indicated by an $ICC > 0.6$, and five of ten single-item measures had moderate test-retest reliability, as indicated by an ICC between 0.4 and 0.6. The single-item measure “My father eats fatty or sweet snacks several times per week” had the lowest ICC (0.38) and showed poor percentage agreement (59%). (**Table 4**), and the single-item measure “My father drinks sugar-sweetened soft drinks several times per week” had the highest ICC (0.81) (**Table 4**).

Table 4: Characteristics and intraclass correlation coefficients of intrapersonal and interpersonal determinants

Intrapersonal and interpersonal determinants	Mean	SD	ICC	95% CI	% agr.
Self-efficacy	3.43	0.74	0.53	0.32 – 0.69	
* ...I find it difficult to choose low-fat foods (e.g. fruit rather than chips or “light” milk rather than “full cream” milk)	3.63	1.19	0.42	0.17 – 0.60	
... I find it easy to choose a healthy snack when I eat in between meals (e.g. fruit or reduced-fat yoghurt)	3.61	1.31	0.26	0.05 – 0.45	47 %
... I believe I have the knowledge and ability to choose/prepare healthy snacks	3.65	1.23	0.61	0.45 – 0.73	
*... I find it difficult to choose healthy meals/snacks when I am with friends	3.38	1.21	0.31	0.03 – 0.53	49 %
Parental rules for unhealthy eating	3.57	0.99	0.71	0.59 – 0.80	
My parents have clear rules for how much soft drinks with added sugar (fizzy drinks, cordial etc.) I can drink	3.41	1.16	0.67	0.53 – 0.77	
My parents have clear rules for how much sweets (chocolate, ice cream, cookies, cake etc.) I can eat	3.75	1.11	0.72	0.60 – 0.81	
My parents put limits on how much salty snacks (potato chips, peanuts etc.) I can eat	3.5	1.16	0.60	0.44 – 0.72	
My parents have clear rules for how much fast food I can eat	3.6	1.34	0.64	0.49 – 0.75	
Parental rules for breakfast	3.71	1.42	0.58	0.42 – 0.71	

Intrapersonal and interpersonal determinants	Mean	SD	ICC	95% CI	% agr.
My parents have rules whether I must eat breakfast					
Maternal Norms	4.64	0.56	0.33	0.12 – 0.51	66 %
My mother thinks I should eat healthy	4.63	0.84	0.39	0.15 – 0.52	81 %
My mother is a healthy eater	4.56	0.90	0.36	0.15 – 0.54	70 %
Paternal norms	4.44	0.68	0.41	0.21 – 0.58	
My father thinks I should eat healthy	4.56	0.86	0.47	0.28 – 0.62	
My father is a healthy eater	4.36	0.97	0.40	0.20 – 0.57	
Parental Modeling					
My mother eats fruit every day	4.1	0.98	0.59	0.43 – 0.72	
My father eats fruit every day	3.79	1.08	0.57	0.40 – 0.70	
My mother eats vegetables every day	4.31	0.99	0.57	0.41 – 0.70	
My father eats vegetables every day	4.22	1.02	0.58	0.42 – 0.71	
My mother eats breakfast every day	4.40	1	0.60	0.44 – 0.73	
My father eats breakfast every day	4.48	0.88	0.49	0.30 – 0.64	
My mother drinks sugar-sweetened soft drinks several times per week	1.47	0.86	0.66	0.51 – 0.77	
My father drinks sugar-sweetened soft drinks several times per week	1.74	1	0.81	0.72 – 0.88	
My mother eats fatty or sweet snacks several times a week	1.67	0.88	0.66	0.51 – 0.77	
My father eats fatty or sweet snacks several times a week	1.87	0.84	0.38	0.18 – 0.56	59 %
Accessibility of vegetables at home	4.08	0.77	0.74	0.62 – 0.83	
At home we vary the type of vegetables served for dinner during a week	4.02	1.1	0.46	0.27 – 0.62	
At home we vary how the vegetables are prepared for dinner during a week	3.86	1.17	0.65	0.51 – 0.76	
At home we usually have vegetables for dinner every day	4.14	1.08	0.66	0.51 – 0.77	
At home there are usually vegetables that I like available	4.15	1.07	0.64	0.49 – 0.75	
Accessibility of soft drinks at home	2.1	0.82	0.67	0.53 – 0.77	
At home we usually have sugar-sweetened soft drinks for dinner during weekend days	2.72	1.36	0.57	0.40 – 0.70	
At home there are usually sugar-sweetened soft drinks available	2.14	1.25	0.65	0.50 – 0.76	

Intrapersonal and interpersonal determinants	Mean	SD	ICC	95% CI	% agr.
At home we usually have sugar-sweetened soft drinks for dinner at week days	1.25	0.63	0.43	0.22 – 0.59	
Accessibility of fruits at home	4.24	0.77	0.77	0.66 – 0.84	
At home there are usually fruits that I like available	4.51	0.89	0.60	0.45 – 0.73	
At home we vary the fruits available in the house during the week	4.27	1.1	0.65	0.50 – 0.76	
At home I think it is easy to find and eat fruit	2.53	1.24	0.71	0.58 – 0.80	
Availability of snacks at home	2.53	1.1	0.77	0.66 – 0.84	
At home we usually have sweet and salty snacks available	2.53	1.24	0.67	0.52 – 0.77	
At home I have almost always had easy access to sweet and salty snacks	2.4	1.25	0.71	0.59 – 0.80	
Accessibility of breakfast at home	4.65	0.5	0.47	0.28 – 0.62	
At home we usually have breakfast foods (bread, cereal, milk) available	4.82	0.52	0.53	0.36 – 0.68	
At home I have almost always had easy access to breakfast food	4.64	0.8	0.35	0.14 – 0.53	67%

*=inverted variables, SD = Standard deviation , ICC = Intraclass correlation Coefficient, 95% CI =95 percentile Confidence Interval, % agr = percentage agreement.

Perceived environmental determinants

All six single-item measures of perceived environmental showed moderate to good test-retest reliability, as indicated by ICCs between 0.4 and 0.8, ranging from an ICC of 0.53 (“It is cheaper to buy sugar-sweetened soft drinks than it is to buy fruits and vegetables”) (Table 5a) to 0.72 (“It is easy to obtain a large and varied selection of fruits and vegetables that I like”) (Table 5a).

Test-retest reliability for multi-item scales ranged from 0.54 (“Perceived accessibility of food outlets”), indicating moderate test retest reliability, shown by an ICC between 0.4 and 0.6, to 0.71 (“Perceived attractiveness of fast-food outlets”), indicating good test-retest reliability as shown by an ICC between 0.6 and 0.8.

The perceived availability of food outlets scale had a Cohens’ Kappa ranging from 0.37 (Café) to 0.63 (Food store), indicating moderate test-retest reliability , and a ICC ranging

from 0.53 (café) to 0.77 (shopping center), which also indicated moderate to good test-retest reliability (**Table 5b**).

Table 5a: Test-retest reliability of perceived environmental determinants

Perceived environmental determinants	Mean	SD	ICC	95% CI	% agr.
Perceived accessibility of food in neighborhood stores					
There is a large variety of fresh and varied fruits and vegetables that I like available	4.46	0.84	0.72	0.60 – 0.81	
There is a large variety of sweet and salty snacks (chocolates, chips, biscuits, muffins etc.) that I like available	3.68	1.39	0.63	0.48 – 0.75	
There is a large variety of sugar-sweetened soft drinks that I like available	4.60	1.45	0.59	0.42 – 0.70	
It is cheaper to buy sugar-sweetened soft drinks or snacks (e.g biscuits or chips) than it is to buy fruit and vegetables	2.74	1.31	0.53	0.35 – 0.67	
Food spending frequency					
How often do you purchase food/drinks in shops (grocery store, kiosk, gas station) around your school or in your neighborhood?					
Food spending quantity					
How much money do you usually spend on food and/or drinks per week	53.79	56	0.64	0.48 - 0.75	
Perceived accessibility of food outlets					
There are stores (grocery stores, kiosks, gas stations) within easy walking distance of my home	4.10	1.23	0.37	0.20 – 0.56	58.5%
There are fast-food outlets (kebab shops, McDonald's) within easy walking distance of my home	3.01	1.48	0.58	0.41 – 0.71	
Perceived attractiveness of fast-food outlets					
The food is cheap	3.48	1.11	0.75	0.63 – 0.83	
They sell food i like to eat	3.89	1.1	0.64	0.49 – 0.76	
They sell food i can easily share with others	3.69	1.08	0.43	0.24 – 0.59	
A place where I can hang out with my friends	4.16	1.11	0.72	0.60 – 0.81	
It is a place used by many adolescents I know	3.64	1.29	0.64	0.48 – 0.75	

SD = Standard deviation , ICC = Intraclass correlation Coefficient, 95% CI =95 percentile Confidence Interval, % agr = percentage agreement.

Table 5b: Test-retest reliability of perceived availability of fast-food outlets

Perceived availability of food outlets										
Walking distance from home to food outlet	1-5 Min	6-10 Min	11-20 Min	21-30 Min	31 Min eller mer	Vet ikke	Kappa	SE	ICC	95% CI
Kiosk	21 %	33 %	21 %	17 %	2 %	6 %	0.42	0.06	0.53	0.35 – 0,67
Food store	22 %	42 %	23 %	10 %	1 %	2 %	0.63	0.06	0.65	0.51 – 0,76
Fruit-and-vegetable store	15 %	32 %	28 %	11 %	2 %	11 %	0.49	0.07	0.64	0.49 – 0,75
Shopping Mall	8.5 %	31 %	25.6 %	15.9 %	14.6 %	4.9 %	0.53	0.07	0.77	0.66 – 0,84
Fast-food outlet	7.3%	15.9%	25.6%	22%	13.4%	15.9%	0.38	0.06	0.67	0.53 – 0.77
Cafe	17 %	33 %	31 %	10 %	6 %	2 %	0.37	0.07	0.53	0.35 – 0,67
Restaurant	7.4 %	22 %	24.4 %	12.2 %	11.0 %	22 %	0.46	0.07	0.66	0.52– 0,79

SE = standard error, ICC= Intraclass correlation coefficient, 95% CI = 95 percentile confidence interval

5 Discussion

The aim of this study was to evaluate the content validity, internal consistency reliability and test-retest reliability of the TACKLE questionnaire on EBRBs and their determinants among Norwegian adolescents attending the 7th grade. Content validity was evaluated by conducting a pre-test study which included a cognitive interview, while internal consistency reliability and test-retest reliability were evaluated in a test-retest study. Results from these studies indicated satisfactory content validity, test-retest reliability and internal consistency reliability. The first part of the discussion will focus on the methodological aspects of assessing the TACKLE questionnaire, while the second part will consist of a discussion of the results themselves.

5.1 Methodological considerations

It is important to consider the methods used when discussing the results of a study, as the strengths and weaknesses of the methods used will affect the quality of the results and the conclusions that can be drawn from them. Some of these methodological issues are likely to be generic in nature, while others will be specific to the participants and the context in which the study took place (such as homogenous sampling according to SES).

5.1.1 Sample selection

Participants were recruited from schools located in municipalities outside Oslo, in the south-eastern part of Norway. Most invited schools either chose not to participate or did not reply to our invitation, which resulted in a low response rate at the school level (27%). Reasons for non-participation was not documented, but in the HEIA study some schools chose not to participate due to already being enrolled in similar studies (122), and this could be the case for schools invited in this thesis as well. The increase in the number of ongoing studies focusing on school-level children and adolescents has been suggested as a possible reason for a rate reduction of participation in epidemiological studies over the last 30 years (123). However, it could also be the case that the schools who consented to participate were simply more motivated, which makes volunteer bias at the school level a possibility (124).

Significant efforts were made to recruit schools with a diverse ethnic and socioeconomic composition in order to obtain a sample that would be similar to the intended participants of the main study. One of the three schools which agreed to participate in the test-retest study was in a municipality with a majority of immigrant and Norwegian-born with immigrant parents' population. The other two schools were located in areas where the immigrant population were similar to the national average of 18.2% (125). Immigrants and Norwegian-born with immigrant parents were slightly overrepresented in the test-retest study compared to the national average (21%). While neither parental education nor ethnicity was documented for pre-test participants, the test-retest study showed acceptable ethnic diversity.

5.1.2 Parental Consent and SES

The parental consent rate in the test-retest study was 57%, which is lower than parental consent rates in Norwegian school-based nutrition studies conducted previously (117, 122, 126). The majority of the participants (83%) had at least one parent with a level of education equivalent of a university degree (>13 years of education), which is close to three times the national average (127). This indicates that more parents with higher levels of education provided consent compared to parents with lower levels of education than we expected, which suggests the presence of volunteer bias at the parental level (124).

Consent rates of parents with lower levels of education could have been influenced by the information documents or the parental consent forms that we developed. (##vedlegg 3). In the consent forms we asked parents/guardians to provide the number of years of education that the most educated parent/guardian had completed, and in the information material we provided information on the future purpose of the main study and its intent to focus on social inequalities in health.

Parents with lower levels of education might be hesitant to provide information about themselves that might indicate lower status or lack of educational achievement, and for this reason not let their adolescent participate in our study. It is also possible that parents could hesitate to allow their offspring to participate in a study if it appeared as if they would be targeted or put under scrutiny based on the SES of their parents.

An initial aim of this thesis was to see if there would be any differences in test-retest reliability or internal consistency reliability between participants according to differences in

SES, but due to the high percentage of consenting parents reporting high levels of education, and the sample size which ended up to be lower than expected due to low participation rates, this was not possible. Further research is needed to assess the validity and reliability of the questionnaire in an adolescent sample with greater SES diversity.

5.2 Results

5.2.1 Content Validity

Pre-testing the questionnaire showed that participants in general understood the questionnaire the way we intended. Some items were exceptions to this as they were reported by participants as being difficult to answer due to using complicated terminology, and some items asked for information the participants did not have. Other items were reported as difficult to understand because the explanations provided were not easy to locate.

Our findings support recommendations in the literature that questionnaires should be pre-tested, even when using measures adapted from other studies that have been previously shown to be reliable/valid for other populations (88, 128).

Our findings support the recommendation that conducting cognitive pre-testing is an important step in the questionnaire design process to increase questionnaire validity and reduce the occurrence of measurement error (128-130).

Another finding revealed by pre-testing was that participants needed more time to complete the questionnaire than we had intended even though it was expected that some shortening would be required after the pretest. This could be attributed to either total questionnaire length or participants needing to spend more time interpreting items. The final version of the questionnaire is intended to be completed within one school hour (duration 45 minutes) during the main study, so having participants spend more than 70 minutes in the pre-test indicated a clear need for a reduction in questionnaire size. The time needed to complete the questionnaire was reduced drastically from pre-test to test-retest, which suggests that the changes to the questionnaire were beneficial for participants ability to understand and interpret items. The reduction in time needed to complete the questionnaire was also reduced further from test to retest, but this is likely due to participants being more familiar with the questionnaire and the process of filling it out the second time around.

Feedback from the cognitive interviews furthermore shows the importance of using words the participants understand. Those words are likely to differ from the phrases and terms used by university-educated researchers (131). If specific terminology or difficult words has to be used, care must be taken to ensure they are accompanied by an explanation that participants understand. This explanation must be easily identifiable in the text by being placed close to the relevant item, by being clearly labeled as an explanation and by being written in a font large enough so that the explanation is easily readable. It is important to keep in mind that findings from qualitative research are not necessarily generalizable to populations outside of the context of the interview (132), and that they are not guaranteed to identify every single issue. An example of this was the items assessing weekly food purchasing frequency and average amount spent during shopping (see **Table 5a**), where two cognitive interview participants reported being uncertain as to whether they should include the times they accompanied their parents while shopping groceries. Had this item been perceived similarly by a larger selection of participants we would expect this to inflate both shopping frequency and especially the amount of money reported spent on food as parents should have substantially larger disposable income available for shopping. Both means, however, were low and test-retest reliability were acceptable, which suggests that this was not the case.

The fact that we didn't gather data on socioeconomic status on any of the participants in either part of the pre-test makes it difficult to determine if participants were sufficiently diverse in terms of either parental SES or ethnicity for the pre-test to identify all issues affecting content validity. However, as the school consenting to pre-test participation was located in the same municipality as the test-retest schools, it is possible that the students shared similarities in terms of SES and ethnicity. If that was the case that it is possible that the pre-test did not capture all issues relevant to lower-SES adolescents, which should be investigated further.

5.3 Reliability

Test-retesting the questionnaire enabled assessment of the reliability of the dietary behaviors, intra-personal / inter-personal determinants and perceived environmental determinants, as well as internal consistency reliability of the multi-item scales and included in this thesis.

5.3.1 Dietary behaviors

The majority of dietary behaviors showed good to excellent test-retest reliability, with 90 % of all behaviors falling within moderate to excellent reliability. This suggests that the questionnaire managed to reliably measure the reported dietary behaviors over time. These results are comparable to the studies these measures were taken from (106-109).

Some findings do however deserve further discussion.

The reported consumption of soft drinks in this study were higher than reported by other Norwegian studies among adolescents (113, 117). This discrepancy could be attributed to differences in the way soft drink consumption was reported, as our study described soft drink consumption using glasses, cans and bottles to measure consumption, where the other studies measured intake using only glasses as the serving size.

Measures of energy drink intake showed low variability but high percentage agreement, which suggests a highly homogenous pattern of consumption. As mean energy drink intakes across both week, weekday and weekend day were very low, our data suggests that our participants consumed very little energy drinks. These findings are similar to a paper by Degirmenci et al (133) that looked at energy drink consumption by Norwegian adolescents, that found that while only 3.5% of participants were “high consumers” of energy drinks .energy drink intake was also inversely associated with adolescent SES. Even though we expect the main study to include more adolescents with low SES, which could influence the reported consumption of energy drinks, items measuring energy drink intake was removed from the questionnaire due to limitations in questionnaire length. Items measuring fast food consumption were taken from an American study by Niemeier et al (106), but no previous evidence of reliability or validity of these items exists to our knowledge. The findings in this study indicate moderate to good reliability for these measures.

Items measuring snacks consumption were adapted from the HEIA study (109), but evidence for the reliability of these measures has not been published. The item assessing intake of baked goods had lower test-retest reliability than the other measures. This could be due to assessing the intake of multiple different types of baked goods using the same item (buns, rolls, cookies, biscuits etc.). The item was subsequently modified for use in the main study.

5.3.2 Internal consistency reliability

The majority of multi-item scales included in this thesis scales showed Acceptable or higher internal consistency reliability. Four out of nine scales contained only two items. While larger multi-item scales would be better for purposes of scale development and scale testing, this is not always feasible as suitable scales might not be available, or there might not be enough time available for participants to fill out questionnaires if the number and size of scales gets excessive. When evaluating the internal consistency reliability of two-item scales Eisinga et al (134) suggests that Cronbach's alpha is only an "accurate estimate of reliability under rather restrictive conditions", and that Cronbach's alpha in these cases are likely to under-estimate the actual internal consistency. While using larger scales would be preferable, this needs to be weighed against an increase in questionnaire completion time as mentioned earlier. Since we are mainly interested in whether the internal reliability is above our cutoffs or not, then using Cronbach's alpha is still a reasonable choice, as long as the inherent limitations regarding absolute internal consistency reliability are kept in mind.

The original self-efficacy scale, as presented by Dewar et al (110), had a Cronbach's alpha of 0.7. This is fairly close to the alpha score of 0.66 our adapted scale could be increased to if the "I think it is hard to select healthy meals/snacks with friends" item response is removed, as suggested by our "alpha if item deleted" calculations (**Table 3**). This response option likely reduced internal consistency reliability by asking about self-efficacy regarding choices when with friends, where the other items asked about self-efficacy towards healthy eating in general.

The original scale contained nine items, which was reduced to seven items during questionnaire development whereas our scale was composed of four initial items and should be reduced to three. While Dewar et al does mention that an "iterative process was employed" to improve the questionnaire, they do not describe the process further or provide any details on how individual items contribute to the internal consistency reliability of the scale.

The tendency to limit describing how questionnaires are adjusted pose an interesting problem for comparing research.

The accessibility of soft drinks at home scale consists of 3 items, and removal of the “At home we usually drink sugar-sweetened soft drinks for dinner during weekdays” results in a very slight increase in alpha from 0.65 to 0.72. While deleting this item does increase the alpha, this increase is so slight that it might is not worth removing since it also affects our ability to analyze how the individual items influence the internal consistency reliability of the scale.

5.3.3 Test-retest reliability: Inter/intrapersonal determinants

The interpersonal and intrapersonal determinants included in this thesis included both multi-item scales and single-item measures. The ten single-item measures assessed aspects of parental modeling by measuring participants perceptions of different dietary behaviors displayed by their parents. The single-item measures had on average lower test-retest reliability than the multi-item scales. During the pre-test participants reported that items that asked them to comment on the behaviors of others, especially when they were not present, to be difficult to complete due to lacking knowledge. This could have impacted the reliability of the single measure items assessing parental modeling. If this was the case however, we would expect to see higher reliability estimates of those parental behaviors that reliably takes place in the presence of adolescents, and lower in those that don't. Since vegetables are normally served for dinner in Norway, and dinner is commonly eaten by the family as a group, this behavior should have higher reliability estimates than the others, but this is not the case.

Multi-item scales included measures of accessibility and availability of vegetables, soft drinks, fruits, snacks and breakfast items at home. All items were formulated similarly, starting with the phrase “At home I/we...”. Having items using similar and simple language likely made them easier to understand for participants. Scales measuring home accessibility for soft drinks and vegetables were adapted from the F&D study(113), and were used as templates for scales measuring accessibility of fruits and snacks.

These scales showed similar test-retest reliability, with ICCs ranging from 0.67-0.77, except for the scale assessing accessibility of breakfast items at home, which had an ICC of 0.47. This difference in reliability is likely due to the fact that while it is common to refer to fruits,

vegetables, soft drinks and snacks on a group level in Norwegian, breakfast foods are not commonly grouped this way. Uncertainty regarding what constitutes “breakfast foods” could have increased the opportunity for interpreting the item differently from test to re-test, which could lower test-retest reliability.

Scales assessing parental norms were obtained from an American study on the role of social norms and personal agency, which had close to excellent test-retest reliability (115). The original scale consisted of three items, which were adjusted to two items for our study. Both maternal and paternal norms had close to poor ICCs. Paternal norms were barely above the ICC cutoffs of 0.4 while maternal norms were below but showed acceptable percentage agreement. This indicates that the low maternal ICCs were due to low variability. These items were not accompanied by an explanation of which foods we defined as “healthy foods”, or what we meant by being a “healthy eater” so it is possible that participants included other food items into this category than the ones we intended, and in this way caused answers to be overly homogenous. This could possibly be improved by adding an explanation or by referring to specific healthy food items (vegetables, whole-grain bread, fruits etc.)

5.3.4 Test-retest reliability: Perceived environmental determinants

The perceived environmental determinants included in this study consisted of six single-item measures and three multi-item scales.

Items assessing food purchasing patterns, as well as perceived accessibility of food in neighborhood stores has not previously been assessed for validity or reliability.

Most of our participants reported rarely spending money on food, and those who did purchase food items for themselves reported spending small amounts of money when they did so. This mirrors the findings from the ESSENS study, which used these items originally (117), where near 75 % of the adolescents reported never purchasing food items in shops located around their schools.

The lowest ICC reliability among the “Accessibility of food stores” were found for the item assessing the accessibility of food outlets in general - “There are stores (grocery stores, kiosks, gas stations) within easy walking distance of my home”.

This scale explored participants' perceptions of accessibility, or whether they thought the shops were located close enough to be within walking distance. As walking distance is related to the physical environment participants reside in, variations in the physical environment should influence the perceptions of that environment. Since questionnaires were completed from November to December, it is possible that changes in temperature, daylight or the amount of snow/ice present could influence perceptions of accessibility.

Another explanation for the low reliability of this item might be that the item covers a wide range of different types of food outlets, which are more different from each other than kebab shops and McDonald's, which are included in the other item assessing perceptions about accessibility.

The perceived attractiveness of fast-food outlets scale was based on findings of an unpublished qualitative study, and for this reason directly comparing results with those of other studies is not possible. The scale showed Good test-retest reliability, with the items on food price and the ability to socialize with friends providing the highest ICCs. The questions assessing the perceived availability of food outlets were taken from a larger questionnaire assessing neighborhood walkability using a sample of adolescents and parents of adolescents and children (116). The original paper reported an ICC of 0.87, but it appears the author obtained this coefficient by combining all 20 included destinations (supermarket, post office, library, grocery store, etc.) , so it is not possible to compare ICCs directly between individual types of food outlets. This procedure likely inflated the ICC value of this group, as the ICC will increase as the number of items in a scale grows large enough.

It is likely that the perceptions regarding availability is influenced by the type of food outlet and to what degree the items being sold in these outlets are relevant for adolescents. The item assessing the perceived accessibility of shops with the highest test-retest reliability was the item assessing availability of shopping malls, which could be due to shopping malls being popular places for adolescents to socialize. There are also less shopping malls than there are grocery stores or gas stations. This could make perceptions of walkability easier to quantify, which would increase reliability. This stands in contrast to the perceived availability of cafés, which had the lowest test-retest reliability. This result is possibly due to it not being common for 7th graders to drink coffee or tea, which are the main items sold in cafés.

5.4 Strengths and limitations

Issues regarding strengths and limitations have already been included in previous parts of the discussion, but some additional issues do need to be mentioned.

One strength of this thesis was the use of a conceptual framework developed according to ecological models of health behavior to investigate a wide range of EBRBs and the associated determinants across multiple levels of influence. Using a digital questionnaire enabled participants to directly upload their responses to a central databank, which helped maintain confidentiality and removed the need for researchers to manually enter data, reducing risk of input error.

Results from the pre-test were strengthened by using cognitive interview techniques to elicit information from participants. Asking probing questions and allowing participants to think aloud during answering allowed the interviewer to focus on the areas of interest, while participants were free to use their own words to explain themselves.

Even though the Master's student could have benefited from more experience with cognitive interviewing in order to ask appropriate follow-up questions (82), the interview went relatively smooth. Having other members of the research group seated nearby taking notes during the interview increased the likelihood of identifying all comments of interest mentioned during the interview. The research group members also contributed by raising additional questions they considered relevant.

One limitation of the pre-test study is that not enough time was reserved for questionnaire analysis. Having only 15 minutes to analyze the pre-test materials from the 28 participants (with four research group members involved in going through the material) before we started the cognitive interviews could have led to overlooking issues raised by participants. As cognitive interview participants were selected by the teacher, we were not able to influence participant selection. This represented an important opportunity to influence participant diversity. It is also possible that conducting cognitive interviews in a group setting could have allowed for some social desirability bias to occur, as participants could have limited their feedback to our questions in order to avoid giving "wrong" answers in front of their classmates. We did not achieve the SES diversity we aimed for in terms of parental education.

6 Conclusions

The aim of this study was to aid in the development of the TACKLE study cross-sectional questionnaire by evaluating the content validity, internal consistency reliability and test-retest reliability of dietary behavior items assessing EBRBs and associated determinants among a sample of Norwegian 7th graders.

The findings in this thesis demonstrate in accordance with the research questions that

- 1) Pre-testing of the questionnaire identified items that participants reported as difficult to understand due to lack of information and use of complicated language, and allowed for changes to be made to the questionnaire before test-retest. Aside from these issues, the pretest showed that adolescents largely understood the items assessing EBRBs and their determinants in line with what the items were supposed to measure.
- 2) The determinants measured by multi-item scales included in this study showed acceptable internal consistency reliability.
- 3) The measures of dietary behaviors and associated determinants included in this study showed overall acceptable test-retest reliability, as measured by both multi-item scales and single-item measures.

More research is needed to see if a low-SES sample of participants would produce similar estimates of test-retest reliability and internal consistency reliability.

7 References

1. Folkehelseinstituttet. Norwegian Mother, Father and Child Cohort Study (MOBA) 2008 [cited 2020 22.02.20]. Available from: <https://www.fhi.no/en/studies/moba/>.
2. Kremers SPJ, de Bruijn G-J, Visscher TLS, van Mechelen W, de Vries NK, Brug J. Environmental influences on energy balance-related behaviors: A dual-process view. *International Journal of Behavioral Nutrition and Physical Activity*. 2006;3(1):9.
3. Finucane MM, Stevens GA, Cowan MJ, Danaei G, Lin JK, Paciorek CJ, et al. National, regional, and global trends in body-mass index since 1980: systematic analysis of health examination surveys and epidemiological studies with 960 country-years and 9.1 million participants. *Lancet*. 2011;377(9765):557-67.
4. Organization WH. Report of the commission on ending childhood obesity: World Health Organization; 2016.
5. Borghi E, Blössner M, de Onis M. Global prevalence and trends of overweight and obesity among preschool children. *The American Journal of Clinical Nutrition*. 2010;92(5):1257-64.
6. Ng M, Fleming T, Robinson M, Thomson B, Graetz N, Margono C, 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. *Lancet (London, England)*. 2014;384(9945):766-81.
7. Kelsey MM, Zaepfel A, Bjornstad P, Nadeau KJ. Age-Related Consequences of Childhood Obesity. *Gerontology*. 2014;60(3):222-8.
8. Gungor NK. Overweight and obesity in children and adolescents. *J Clin Res Pediatr Endocrinol*. 2014;6(3):129-43.
9. Vander Wal JS, Mitchell ER. Psychological complications of pediatric obesity. *Pediatr Clin North Am*. 2011;58(6):1393-401, x.
10. Skinner AC, Perrin EM, Moss LA, Skelton JA. Cardiometabolic Risks and Severity of Obesity in Children and Young Adults. *N Engl J Med*. 2015;373(14):1307-17.
11. Kumar S, Kelly AS. Review of Childhood Obesity: From Epidemiology, Etiology, and Comorbidities to Clinical Assessment and Treatment. *Mayo Clin Proc*. 2017;92(2):251-65.
12. Calcaterra V, Klersy C, Muratori T, Telli S, Caramagna C, Scaglia F, et al. Prevalence of metabolic syndrome (MS) in children and adolescents with varying degrees of obesity. *Clinical Endocrinology*. 2008;68(6):868-72.
13. Weiss R, Dziura J, Burgert TS, Tamborlane WV, Taksali SE, Yeckel CW, et al. Obesity and the metabolic syndrome in children and adolescents. *N Engl J Med*. 2004;350(23):2362-74.
14. Andersen LF, Lillegaard IT, Overby N, Lytle L, Klepp KI, Johansson L. Overweight and obesity among Norwegian schoolchildren: changes from 1993 to 2000. *Scand J Public Health*. 2005;33(2):99-106.
15. Hovengen R BAoGK. Barns vekst i Norge 2008-2010-2012. Fhi.no: Folkehelseinstituttet; 2014.
16. Shrewsbury V, Wardle J. Socioeconomic status and adiposity in childhood: a systematic review of cross-sectional studies 1990-2005. *Obesity (Silver Spring)*. 2008;16(2):275-84.
17. Poulsen PH, Biering K, Winding TN, Nohr EA, Andersen JH. How does childhood socioeconomic position affect overweight and obesity in adolescence and early adulthood: a longitudinal study. *BMC obesity*. 2018;5:34-.

18. Rogers R, Eagle TF, Sheetz A, Woodward A, Leibowitz R, Song M, et al. The Relationship between Childhood Obesity, Low Socioeconomic Status, and Race/Ethnicity: Lessons from Massachusetts. *Child Obes.* 2015;11(6):691-5.
19. Gebremariam MK, Lien N, Nianogo RA, Arah OA. Mediators of socioeconomic differences in adiposity among youth: a systematic review. *Obesity reviews : an official journal of the International Association for the Study of Obesity.* 2017;18(8):880-98.
20. Juliusson PB, Roelants M, Eide GE, Hauspie R, Waaler PE, Bjerknes R. Overweight and obesity in Norwegian children: secular trends in weight-for-height and skinfolds. *Acta Paediatr.* 2007;96(9):1333-7.
21. Groholt EK, Stigum H, Nordhagen R. Overweight and obesity among adolescents in Norway: cultural and socio-economic differences. *J Public Health (Oxf).* 2008;30(3):258-65.
22. Olds T, Maher C, Zumin S, Peneau S, Lioret S, Castetbon K, et al. Evidence that the prevalence of childhood overweight is plateauing: data from nine countries. *International journal of pediatric obesity : IJPO : an official journal of the International Association for the Study of Obesity.* 2011;6(5-6):342-60.
23. Herter-Aeberli I, Osuna E, Sarnovska Z, Zimmermann MB. Significant Decrease in Childhood Obesity and Waist Circumference over 15 Years in Switzerland: A Repeated Cross-Sectional Study. *Nutrients.* 2019;11(8).
24. Lasserre AM, Chiolero A, Cachat F, Paccaud F, Bovet P. Overweight in Swiss Children and Associations With Children's and Parents' Characteristics. *Obesity.* 2007;15(12):2912-9.
25. Conolly A, Davies B. Health Survey for England 2017—Adult and Child Overweight and Obesity. NHS Digital, NHS: Leeds, UK. 2018.
26. Craigie AM, Lake AA, Kelly SA, Adamson AJ, Mathers JC. Tracking of obesity-related behaviours from childhood to adulthood: A systematic review. *Maturitas.* 2011;70(3):266-84.
27. Lien N, Lytle LA, Klepp KI. Stability in consumption of fruit, vegetables, and sugary foods in a cohort from age 14 to age 21. *Prev Med.* 2001;33(3):217-26.
28. Totland TH, Gebremariam MK, Lien N, Bjelland M, Grydeland M, Bergh IH, et al. Does tracking of dietary behaviours differ by parental education in children during the transition into adolescence? *Public health nutrition.* 2012;16(4):673-82.
29. Rolland-Cachera M-F, Deheeger M, Guilloud-Bataille M, Avons P, Patois E, Sempé M. Tracking the development of adiposity from one month of age to adulthood. *Annals of Human Biology.* 1987;14(3):219-29.
30. 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):474-88.
31. Kvaavik E, Seppola Tell G, Klepp KI. [Stability of body mass index from adolescence to adulthood]. *Tidsskr Nor Laegeforen.* 2002;122(9):894-900.
32. Guo SS, Chumlea WC. Tracking of body mass index in children in relation to overweight in adulthood. *The American Journal of Clinical Nutrition.* 1999;70(1):145S-8S.
33. Schwartz MW, Seeley RJ, Zeltser LM, Drewnowski A, Ravussin E, Redman LM, et al. Obesity Pathogenesis: An Endocrine Society Scientific Statement. *Endocrine Reviews.* 2017;38(4):267-96.
34. Economos CD, Hatfield DP, King AC, Ayala GX, Pentz MA. Food and Physical Activity Environments: An Energy Balance Approach for Research and Practice. *American Journal of Preventive Medicine.* 2015;48(5):620-9.

35. Hill JO, Wyatt HR, Peters JC. Energy Balance and Obesity. *Circulation*. 2012;126(1):126-32.
36. Helsedirektoratet. Forebygging og behandling av overvekt og fedme hos barn og unge Helsedirektoratet; 2020 22.02.2020.
37. WHO. Global status report on noncommunicable diseases. World Health Organisation; 2010.
38. Organisation WH. Global strategy on Diet, Physical Activity and Health. 2004 May 2004.
39. Krishnaswamy K, Gayathri R. Nature's bountiful gift to humankind: Vegetables & fruits & their role in cardiovascular disease & diabetes. *Indian Journal of Medical Research*. 2018;148(5):569-95.
40. Casas R, Sacanella E, Estruch R. The immune protective effect of the Mediterranean diet against chronic low-grade inflammatory diseases. *Endocrine, metabolic & immune disorders drug targets*. 2014;14(4):245-54.
41. Alissa EM, Ferns GA. Dietary fruits and vegetables and cardiovascular diseases risk. *Critical Reviews in Food Science and Nutrition*. 2017;57(9):1950-62.
42. Monteiro CA, Cannon G, Moubarac JC, Levy RB, Louzada MLC, Jaime PC. The UN Decade of Nutrition, the NOVA food classification and the trouble with ultra-processing. *Public health nutrition*. 2018;21(1):5-17.
43. Moubarac JC, Martins AP, Claro RM, Levy RB, Cannon G, Monteiro CA. Consumption of ultra-processed foods and likely impact on human health. Evidence from Canada. *Public health nutrition*. 2013;16(12):2240-8.
44. Malik VS, Schulze MB, Hu FB. Intake of sugar-sweetened beverages and weight gain: a systematic review. *The American journal of clinical nutrition*. 2006;84(2):274-88.
45. Gillis LJ, Bar-Or O. Food Away from Home, Sugar-Sweetened Drink Consumption and Juvenile Obesity. *Journal of the American College of Nutrition*. 2003;22(6):539-45.
46. Ludwig DS, Peterson KE, Gortmaker SL. Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *Lancet*. 2001;357(9255):505-8.
47. Bucher Della Torre S, Keller A, Laure Depeyre J, Kruseman M. Sugar-Sweetened Beverages and Obesity Risk in Children and Adolescents: A Systematic Analysis on How Methodological Quality May Influence Conclusions. *Journal of the Academy of Nutrition and Dietetics*. 2016;116(4):638-59.
48. Mancino L, Todd JE, Guthrie J, Lin B-H. Food Away from Home and Childhood Obesity. *Current Obesity Reports*. 2014;3(4):459-69.
49. Ambrosini GL. Childhood dietary patterns and later obesity: a review of the evidence. *The Proceedings of the Nutrition Society*. 2014;73(1):137-46.
50. Kepper M, Tseng TS, Volaufova J, Scribner R, Nuss H, Sothorn M. Pre-school obesity is inversely associated with vegetable intake, grocery stores and outdoor play. *Pediatric obesity*. 2016;11(5):e6-8.
51. Collese TS, Nascimento-Ferreira MV, de Moraes ACF, Rendo-Urteaga T, Bel-Serrat S, Moreno LA, et al. Role of fruits and vegetables in adolescent cardiovascular health: a systematic review. *Nutrition reviews*. 2017;75(5):339-49.
52. Aranceta-Bartrina J, Perez-Rodrigo C. Determinants of childhood obesity: ANIBES study. *Nutricion hospitalaria*. 2016;33(Suppl 4):339.
53. Utleby JM, Affuso O, Rucks AC. Adolescent obesity in contextual settings: a scoping study of multilevel and hierarchical examinations. *Clinical obesity*. 2016;6(5):296-304.
54. Johnson RK. Dietary Intake—How Do We Measure What People Are Really Eating? *Obesity Research*. 2002;10(S11):63S-8S.

55. Shim J-S, Oh K, Kim HC. Dietary assessment methods in epidemiologic studies. *Epidemiol Health*. 2014;36:e2014009-e.
56. Pedersen JI HA, Anderssen SA. *Grunnleggende Ernæringslære*. Oslo: Gyldendal Norsk Forlag; 2009. p. 22-43.
57. Authority EFS. Guidance on the EU Menu methodology. *EFSA Journal*. 2014;12(12):3944.
58. Satija A, Yu E, Willett WC, Hu FB. Understanding nutritional epidemiology and its role in policy. *Advances in nutrition (Bethesda, Md)*. 2015;6(1):5-18.
59. Willett W. *Nutritional epidemiology*: Oxford university press; 2012.
60. WHO. *Global recommendations on physical activity for health*. World Health Organisation; 2010.
61. Melzer K, Kayser B, Pichard C. Physical activity: the health benefits outweigh the risks. *Current Opinion in Clinical Nutrition & Metabolic Care*. 2004;7(6):641-7.
62. Penedo FJ, Dahn JR. Exercise and well-being: a review of mental and physical health benefits associated with physical activity. *Curr Opin Psychiatry*. 2005;18(2):189-93.
63. Sedentary Behaviour Research N. Letter to the Editor: Standardized use of the terms “sedentary” and “sedentary behaviours”. *Applied Physiology, Nutrition, and Metabolism*. 2012;37(3):540-2.
64. Tremblay MS, Colley RC, Saunders TJ, Healy GN, Owen N. Physiological and health implications of a sedentary lifestyle. *Applied Physiology, Nutrition, and Metabolism*. 2010;35(6):725-40.
65. Stiglic N, Viner RM. Effects of screentime on the health and well-being of children and adolescents: a systematic review of reviews. *BMJ Open*. 2019;9(1):e023191.
66. Westerterp KR. Pattern and intensity of physical activity. *Nature*. 2001;410(6828):539-.
67. Sallis J, Owen N. Glanz, Rimer, & Lewis, *Health Behavior and Health Education: Theory, Research and Practice*. JosseyBass Publishers, pgs. 2002;462:484.
68. Swinburn B, Egger G, Raza F. *Dissecting Obesogenic Environments: The Development and Application of a Framework for Identifying and Prioritizing Environmental Interventions for Obesity*. *Preventive Medicine*. 1999;29(6):563-70.
69. de Vet E, de Ridder DT, de Wit JB. Environmental correlates of physical activity and dietary behaviours among young people: a systematic review of reviews. *Obesity reviews : an official journal of the International Association for the Study of Obesity*. 2011;12(5):e130-42.
70. Bauman AE, Sallis JF, Dzewaltowski DA, Owen N. Toward a better understanding of the influences on physical activity: The role of determinants, correlates, causal variables, mediators, moderators, and confounders. *American Journal of Preventive Medicine*. 2002;23(2):5-14.
71. . New York: Oxford University Press; 2001. *Dictionary of Epidemiology*; p. 61.
72. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*. 1986;51(6):1173.
73. Mekonnen T, Havdal HH, Lien N, O'Halloran SA, Arah OA, Papadopoulou E, et al. Mediators of socioeconomic inequalities in dietary behaviours among youth: A systematic review. *Obesity Reviews*.n/a(n/a).
74. de Vet HCW, Terwee, C. B., Mokkink L. B. & Knol, D. L. *Measurement in Medicine : A practical Guide*. Cambridge: Cambridge University Press; 2011.
75. Mokkink LB, Terwee CB, Patrick DL, Alonso J, Stratford PW, Knol DL, et al. The COSMIN study reached international consensus on taxonomy, terminology, and definitions of measurement properties for health-related patient-reported outcomes. *J Clin Epidemiol*. 2010;63(7):737-45.

76. Streiner DL, Norman GR, Cairney J. Health measurement scales: a practical guide to their development and use: Oxford University Press, USA; 2015.
77. Taylor JR. An introduction to Error Analysis : The study of uncertainties in Physical Measurements: University Science Books; 1999.
78. Rossato SL, Fuchs SC. Handling random errors and biases in methods used for short-term dietary assessment. *Rev Saude Publica*. 2014;48(5):845-50.
79. Podsakoff PM, MacKenzie SB, Lee J-Y, Podsakoff NP. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*. 2003;88(5):879-903.
80. Bennett DA, Landry D, Little J, Minelli C. Systematic review of statistical approaches to quantify, or correct for, measurement error in a continuous exposure in nutritional epidemiology. *BMC Medical Research Methodology*. 2017;17(1):146.
81. Rickards G, Magee C, Artino AR, Jr. You Can't Fix by Analysis What You've Spoiled by Design: Developing Survey Instruments and Collecting Validity Evidence. *J Grad Med Educ*. 2012;4(4):407-10.
82. Willis GB, Artino AR, Jr. What Do Our Respondents Think We're Asking? Using Cognitive Interviewing to Improve Medical Education Surveys. *J Grad Med Educ*. 2013;5(3):353-6.
83. Lord FM, Novick MR, Birnbaum A. Statistical theories of mental test scores. Oxford, England: Addison-Wesley; 1968.
84. Bravo G, Potvin L. Estimating the reliability of continuous measures with cronbach's alpha or the intraclass correlation coefficient: Toward the integration of two traditions. *Journal of Clinical Epidemiology*. 1991;44(4):381-90.
85. Association AER, Association AP, Education NCoMi, Educational JCoSf, Testing P. Standards for educational and psychological testing: Amer Educational Research Assn; 1999.
86. Trochim WM. Research Methods - Knowledge Base 2020 [cited 2020 21.03]. Available from: <https://socialresearchmethods.net/kb/types-of-reliability/>.
87. McLeod SA. What is Reliability? 2007 [cited 2020 21.03]. Available from: <https://www.simplypsychology.org/reliability.html>.
88. DeVellis RF. Scale development: Theory and applications: Sage publications; 2016.
89. Liu J, Tang W, Chen G, Lu Y, Feng C, Tu XM. Correlation and agreement: overview and clarification of competing concepts and measures. *Shanghai archives of psychiatry*. 2016;28(2):115-20.
90. Koo TK, Li MY. A Guideline of Selecting and Reporting Intraclass Correlation Coefficients for Reliability Research. *J Chiropr Med*. 2016;15(2):155-63.
91. McGraw KO, Wong SP. Forming inferences about some intraclass correlation coefficients. *Psychological methods*. 1996;1(1):30.
92. Muller R, Buttner P. A critical discussion of intraclass correlation coefficients. *Stat Med*. 1994;13(23-24):2465-76.
93. McHugh ML. Interrater reliability: the kappa statistic. *Biochem Med (Zagreb)*. 2012;22(3):276-82.
94. Tavakol M, Dennick R. Making sense of Cronbach's alpha. *Int J Med Educ*. 2011;2:53-5.
95. Cronbach LJ. Coefficient alpha and the internal structure of tests. *psychometrika*. 1951;16(3):297-334.
96. Cortina JM. What is coefficient alpha? An examination of theory and applications. *Journal of applied psychology*. 1993;78(1):98.

97. Fernandez ME, Ten Hoor GA, van Lieshout S, Rodriguez SA, Beidas RS, Parcel G, et al. Implementation Mapping: Using Intervention Mapping to Develop Implementation Strategies. *Front Public Health*. 2019;7:158.
98. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. *Public health reports (Washington, DC : 1974)*. 2014;129 Suppl 2(Suppl 2):19-31.
99. Brug J, van der Ploeg HP, Loyen A, Ahrens W, Allais O, Andersen LF, et al. Determinants of diet and physical activity (DEDIPAC): a summary of findings. *Int J Behav Nutr Phys Act*. 2017;14(1):150-.
100. Assembly tWG. Declaration of Helsinki - Ethical Principles for Medical Research Involving Human Subjects. 2013 1.10.2013.
101. Oslo Ui. An introduction to TSD Uio.no2014 [cited 2020 26.10.2020]. Available from: <https://www.uio.no/english/services/it/research/sensitive-data/about/introduction.html>.
102. Sentralbyrå S. Innvandrere og norskfødte med innvandrerforeldre i Bærum. ssb.no; 2014.
103. Sentralbyrå S. Innvandrere og norskfødte med innvandrerforeldre i Drammen. SSB.no; 2014.
104. Sentralbyrå S. Innvandrere og norskfødte med innvandrerforeldre i Asker. 2014.
105. Oslo Ui. Nettskjema.no 2020 [cited 2020 23.07]. Available from: www.nettskjema.no.
106. Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. Fast food consumption and breakfast skipping: predictors of weight gain from adolescence to adulthood in a nationally representative sample. *The Journal of adolescent health : official publication of the Society for Adolescent Medicine*. 2006;39(6):842-9.
107. Haraldsdottir J, Thorsdottir I, de Almeida MD, Maes L, Perez Rodrigo C, Elmadfa I, et al. Validity and reproducibility of a precoded questionnaire to assess fruit and vegetable intake in European 11- to 12-year-old schoolchildren. *Annals of nutrition & metabolism*. 2005;49(4):221-7.
108. Singh AS, Vik FN, Chinapaw MJ, Uijtdewilligen L, Verloigne M, Fernandez-Alvira JM, et al. Test-retest reliability and construct validity of the ENERGY-child questionnaire on energy balance-related behaviours and their potential determinants: the ENERGY-project. *Int J Behav Nutr Phys Act*. 2011;8:136.
109. Lien N, Bjelland M, Bergh IH, Grydeland M, Anderssen SA, Ommundsen Y, et al. Design of a 20-month comprehensive, multicomponent school-based randomised trial to promote healthy weight development among 11-13 year olds: The HEalth In Adolescents study. *Scandinavian Journal of Public Health*. 2010;38(5_suppl):38-51.
110. Dewar DL, Lubans DR, Plotnikoff RC, Morgan PJ. Development and evaluation of social cognitive measures related to adolescent dietary behaviors. *Int J Behav Nutr Phys Act*. 2012;9:36.
111. Livingstone MB, Robson PJ, Wallace JM. Issues in dietary intake assessment of children and adolescents. *Br J Nutr*. 2004;92 Suppl 2:S213-22.
112. De Bourdeaudhuij I, Klepp KI, Due P, Rodrigo CP, de Almeida MDV, Wind M, et al. Reliability and validity of a questionnaire to measure personal, social and environmental correlates of fruit and vegetable intake in 10–11-year-old children in five European countries. *Public health nutrition*. 2005;8(2):189-200.
113. Bjelland M, Hausken SES, Sleddens EFC, Andersen LF, Lie HC, Finset A, et al. Development of family and dietary habits questionnaires: the assessment of family processes, dietary habits and adolescents' impulsiveness in Norwegian adolescents and their parents. *Int J Behav Nutr Phys Act* [Internet]. 2014 2014/10//; 11:[130 p.].

114. Benarroch A, Pérez S, Perales J. Factors influencing adolescent eating behaviour: Application and validation of a diagnostic instrument. *Electronic Journal of Research in Educational Psychology*. 2011;9:1219-44.
115. Baker CW, Little TD, Brownell KD. Predicting adolescent eating and activity behaviors: the role of social norms and personal agency. *Health Psychol*. 2003;22(2):189-98.
116. Rosenberg D, Ding D, Sallis J, Kerr J, Norman G, Durant N, et al. Neighborhood Environment Walkability Scale for Youth (NEWS-Y): Reliability and relationship with physical activity. *Preventive medicine*. 2009;49:213-8.
117. Gebremariam MK, Henjum S, Terragni L, Torheim LE. Correlates of fruit, vegetable, soft drink, and snack intake among adolescents: the ESSENS study. *Food & nutrition research*. 2016;60:32512.
118. Nunnally JC. *Psychometric theory*. New York, NY, US: McGraw-Hill; 1967. xiii, 640-xiii, p.
119. Hair JF, Black WC, Babin BJ, Anderson RE, Tatham RL. *Multivariate data analysis*: Prentice hall Upper Saddle River, NJ; 1998.
120. Saelens BE, Frank LD, Auffrey C, Whitaker RC, Burdette HL, Colabianchi N. Measuring physical environments of parks and playgrounds: EAPRS instrument development and inter-rater reliability. *Journal of Physical Activity and Health*. 2006;3(s1):S190-S207.
121. Marston L. *Introductory statistics for health and nursing using SPSS*: Sage Publications; 2010.
122. Grydeland M, Bergh IH, Bjelland M, Lien N, Andersen LF, Ommundsen Y, et al. Correlates of weight status among Norwegian 11-year-olds: The HEIA study. *BMC Public Health*. 2012;12(1):1053.
123. Galea S, Tracy M. Participation rates in epidemiologic studies. *Annals of epidemiology*. 2007;17(9):643-53.
124. *Encyclopedia of Research Design*. 2010.
125. Sentralbyrå S. Innvandrere og norskfødte med innvandrerforeldre 2020 [cited 2020 09.08.2020]. Available from: <https://www.ssb.no/befolkning/statistikker/innvbef>.
126. Bere E, Veierød MB, Bjelland M, Klepp K-I. Outcome and process evaluation of a Norwegian school-randomized fruit and vegetable intervention: Fruits and Vegetables Make the Marks (FVMM). *Health Education Research*. 2005;21(2):258-67.
127. Sentralbyrå S. Befolkningens utdanningsnivå 2020 [cited 2020 09.08.2020]. Available from: <https://www.ssb.no/utniv/>.
128. Collins D. Pretesting survey instruments: an overview of cognitive methods. *Quality of life research : an international journal of quality of life aspects of treatment, care and rehabilitation*. 2003;12(3):229-38.
129. Hilton C. The importance of pretesting questionnaires: a field research example of cognitive pretesting the Exercise referral Quality of Life Scale (ER-QLS). *International Journal of Social Research Methodology*. 2015:1-14.
130. Association AS. *How to conduct pretesting*. 1997.
131. Del Greco L, Walop W. Questionnaire development: 5. The pretest. *CMAJ*. 1987;136(10):1025-6.
132. Solano-Flores G, Li M. Generalizability of Cognitive Interview-Based Measures Across Cultural Groups. *Educational Measurement: Issues and Practice*. 2009;28(2):9-18.
133. Degirmenci N, Fossum IN, Strand TA, Vaktskjold A, Holten-Andersen MN. Consumption of energy drinks among adolescents in Norway: a cross-sectional study. *BMC Public Health*. 2018;18(1):1391.

134. Eisinga R, Grotenhuis Mt, Pelzer B. The reliability of a two-item scale: Pearson, Cronbach, or Spearman-Brown? *International Journal of Public Health*. 2013;58(4):637-42.

8 Appendix

- 1: NSD personal data processing assessment form
- 2: Parental consent forms/adolescent information materiel for the pre-test study
- 3: Parental consent forms/adolescent information materiel for the test-retest study
- 4: Principal consent forms for the test-retest study
- 5: Test-retest questionnaire

NSD sin vurdering

Prosjekttittel

Tackling socioeconomic differences in weight development among youth

Referansenummer

675092

Registrert

22.08.2019 av Mekdes Gebremariam - mekdeskg@uio.no

Behandlingsansvarlig institusjon

Universitetet i Oslo / Det medisinske fakultet / Institutt for medisinske basalfag / Avdeling for Ernæringsvitenskap

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

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Type prosjekt

Forskerprosjekt

Prosjektperiode

15.09.2019 - 30.04.2022

Status

24.09.2019 - Vurdert

Vurdering (1)

24.09.2019 - Vurdert

Our assessment is that the processing of personal data in this project will comply with data protection legislation, so long as it is carried out in accordance with what is documented in the Notification Form and attachments, dated 24.09.2019, as well as in correspondence with NSD. Everything is in place for the processing to begin. NOTIFY CHANGES If you intend to make changes to the processing of personal data in this project it may be necessary to notify NSD. This is done by updating the Notification Form. On our website we explain which changes must be notified. Wait until you receive an answer from us before you carry out the changes. TYPE OF DATA AND DURATION The project will be

processing special categories of personal data about health and general categories of personal data until 30.04.2022. Samples 1-3 consist of pupils in the 7th grade in schools in Oslo and neighbouring areas (aged 12-14 years) and the parents/guardians that sign the consent form. Samples 2 and 3 will take part in a pretest and test-retest before the main data collection in which sample 1 will participate. The collected data relating to sample 1 will consist of online survey data, paper-based survey data, data collected using a physical activity monitor/sensor, physical measurements (height, weight, waist circumference and hip circumference) and data from SSB (see list of variables on the page "Additional information").

LEGAL BASIS The project will gain consent from parents/guardians for the processing of personal data relating to their children (12-14 years) who will participate in the project. For pupils in sample 1, one parent/guardian will sign the consent form and give consent for the processing of personal data relating to the child, including linking data from SSB to the collected data. The parent will give their own educational background, and the educational background of the other parent, on the consent form. The parent that signs the form will gain ethical consent from the other parent before providing this information. We find that consent will meet the necessary requirements under art. 4 (11) and 7, in that it will be a freely given, specific, informed and unambiguous statement or action, which will be documented and can be withdrawn. The legal basis for processing general categories and special categories of personal data relating to data subjects in sample 1 is explicit consent given by parents/guardians, cf. the General Data Protection Regulation art. 6.1 a), cf. art. 9.2 a), cf. the Personal Data Act § 10, cf. § 9 (2). The legal basis for processing general categories of personal data relating to data subjects in samples 2 and 3 is consent given by parents/guardians, cf. the General Data Protection Regulation art. 6.1 a).

Third persons The parent that does not sign the consent form will be a third person in this project. It is necessary to collect information about the educational background of both parents in order to achieve the purpose of the project, and it will involve a disproportionate amount of effort to gain signed consent from both parents. All collected data will be anonymised in publications. Our assessment is that the processing meets the requirement of scientific research, cf. the Personal Data Act § 8, and therefore constitutes a task in the public interest. The project will process personal data relating to third persons on the legal basis that processing is necessary for the performance of a task carried out in the public interest, cf. the General Data Protection Regulation art. 6 nr. 1 e), cf. art. 6 nr. 3 b), cf. the Personal Data Act § 8.

PRINCIPLES RELATING TO PROCESSING PERSONAL DATA NSD finds that the planned processing of personal data will be in accordance with the principles under the General Data Protection Regulation regarding: - lawfulness, fairness and transparency (art. 5.1 a), in that data subjects will receive sufficient information about the processing and will give their consent - purpose limitation (art. 5.1 b), in that personal data will be collected for specified, explicit and legitimate purposes, and will not be processed for new, incompatible purposes - data minimisation (art. 5.1 c), in that only personal data which are adequate, relevant and necessary for the purpose of the project will be processed - storage limitation (art. 5.1 e), in that personal data will not be stored for longer than is necessary to fulfil the project's purpose

THE RIGHTS OF DATA SUBJECTS Data subjects in samples 1-3 will have the following rights in this project: transparency (art. 12), information (art. 13), access (art. 15), rectification (art. 16), erasure (art. 17), restriction of processing (art. 18), notification (art. 19), data portability (art. 20). Third persons will have the

following rights in this project: transparency (art. 12), information (art. 13), access (art. 15), rectification (art. 16), erasure (art. 17), restriction of processing (art. 18), notification (art. 19) and protest (art. 21). These rights apply so long as the data subject can be identified in the collected data. NSD finds that the information that will be given to parents/guardians about the processing of personal data will meet the legal requirements for form and content, cf. art. 12.1 and art. 13. The parent that signs the form will make information about the project available to the other parent. The information letter will meet the legal requirements for content, cf. art. 14. The pupils themselves will receive information about the project that is easy for them to understand. We remind you that if a data subject contacts you about their rights, the data controller has a duty to reply within a month. FOLLOW YOUR INSTITUTION'S GUIDELINES NSD presupposes that the project will meet the requirements of accuracy (art. 5.1 d), integrity and confidentiality (art. 5.1 f) and security (art. 32) when processing personal data. Collaborators inside the EU/EEA will have access to collected data (in pseudonymised form). NSD presupposes that the processing of personal data by a collaborating institution (i.e. data processor) meets the requirements under the General Data Protection Regulation arts. 28 and 29. We understand that no personal data will be shared outside the EU/EEA. To ensure that these requirements are met you must follow your institution's internal guidelines and/or consult with your institution (i.e. the institution responsible for the project). FOLLOW-UP OF THE PROJECT NSD will follow up the progress of the project underway (every other year) and at the planned end date in order to determine whether the processing of personal data is being carried out in accordance with what is documented. Good luck with the project! Contact person at NSD: Eva J B Payne Data Protection Services for Research: +47 55 58 21 17 (press 1)

DOCUMENTS FOR PARENTS

Kjære foreldre til elever på 7.trinn

Forespørsel om deltakelse i forskningsprosjektet

Takle sosioøkonomiske forskjeller i vektutvikling hos ungdommer (TACKLE)

Dette er en forespørsel til deg som foresatt om ditt barn kan delta i et forskningsprosjekt i regi av Universitetet i Oslo, hvor formålet er å tilpasse og finjustere en spørreundersøkelse om kostholdsvaner og fysisk aktivitet rettet mot ungdom.

Hovedmålet med TACKLE-studien er å kartlegge viktige faktorer som påvirker kostholdsvaner, fysisk aktivitet og stillesittende atferd blant ungdom. Studien vil også utforske faktorer som forklarer forskjeller i vaner blant ungdom med ulik sosioøkonomisk bakgrunn. Som en del av forberedelsene til undersøkelsen ønsker vi å gjennomføre en forhåndstest av våre spørsmål, på ungdommer i tilsvarende aldersgruppe i løpet av høsten 2019. Målet er å avklare om spørsmålene vi har valgt ut er lette å forstå for deltakerne, at svaralternativene er klart definerte og tydelige, og at elevene som gjennomfører undersøkelsen forstår spørsmålene slik vi ønsker at de skal forstås. Dette vil bidra til at spørreundersøkelsen holder høy kvalitet, og at konklusjonene vi trekker senere kan brukes til å designe gode tiltak som har god effekt.

Hvem er ansvarlig for forskningsprosjektet?

Avdeling for ernæringsvitenskap ved Universitetet i Oslo er ansvarlig for prosjektet. Studien ledes av forsker Mekdes Gebremariam og professor Nanna Lien. Justering av spørreskjemaet inngår i en masteroppgave i klinisk ernæring ved Universitetet i Oslo. Prosjektet er et samarbeidsprosjekt mellom Universitetet i Oslo, Norges Idrettshøgskole, Universitetet i Bergen, Folkehelseinstituttet og University of California, Los Angeles.

Hvorfor får du spørsmål om å delta?

Du får denne forespørselen som forelder til ett eller flere barn i syvendeklasse ved en skole i nærheten av Oslo. Det er planlagt å gjennomføre spørsmåls-testingen i løpet av høsten 2019.

Hva innebærer det for ditt barn?

Datainnsamlingen vil gjøres ved hjelp av et papirbasert spørreskjema, som vil fylles ut på skolen. Spørreskjemaet handler om kostholdsvaner (inkludert noen få spørsmål om foreldres kostholdsvaner), fysisk aktivitet og stillesittende tid, og faktorer som kan påvirke disse atferdene. Det vil ta 30-45 minutter å fylle ut skjemaet.

Etter utfylling av spørreskjemaene ønsker vi å invitere 8-10 av deltakerne til en åpen gruppesamtale om hvordan de opplevde spørsmålene og om de har noen synspunkter på spørreundersøkelsen. Det vil bli gjort lydopptak av gruppesamtalen. Det er kun masterstudenten som vil høre på lydopptakene.

Det er frivillig å delta

Det er frivillig å delta i studien, og ditt barn kan når som helst trekke sitt samtykke uten å oppgi noen grunn. Dersom ditt barn trekker seg, vil alle opplysninger om han/henne bli anonymisert. Dette vil heller ikke få konsekvenser for ditt barns videre skolegang. Dersom dere aksepterer at ditt barn deltar i prosjektet, skriver dere under samtykkeerklæringen på siste side. Om dere sier ja til å delta, kan dere senere trekke samtykkeerklæringen uten noen konsekvenser.

Personvern – hvordan vi oppbevarer og bruker opplysninger om ditt barn

Vi vil bare bruke opplysningene om deg til det vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er kun autorisert personell knyttet til prosjektet som har adgang til person identifiserbare data.

Kontaktopplysningene vil vi erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data. Det er kun autorisert personell knyttet til prosjektet som har tilgang på navnelistene. Det er kun masterstudenten som vil høre på lydopptakene av gruppesamtalen. Lydfilen vil bli lagret på en forskningsserver som er passordbeskyttet. Filen vil bli slettet når innholdet har blitt transkribert.

Hva skjer med opplysningene om ditt barn når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes i April 2022. De innsamlede data vil bli anonymiserte, og all innsamlet data vil bli behandlet konfidensielt.

Dine rettigheter

Så lenge ditt barn kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om barnet,
- å få rettet personopplysninger om ditt barn,
- få slettet personopplysninger om ditt barn,
- få utlevert en kopi av personopplysninger om ditt barn (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av ditt barns personopplysninger.

Hva gir oss rett til å behandle personopplysninger om ditt barn?

Vi behandler opplysninger om ditt barn basert på ditt og barnets samtykke.

På oppdrag fra Universitetet i Oslo har NSD – Norsk senter for forskningsdata AS - vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Forsker Mekdes Gebremariam på tlf. 22 85 11 11 eller e-post mekdes.gebremariam@medisin.uio.no
- Professor Nanna Lien på tlf: 22 85 13 72 eller e-post nanna.lien@medisin.uio.no
- Personvernombud ved UiO. E-post: personvernombud@uio.no
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17

Med vennlig hilsen

Prosjektansvarlig
Mekdes Gebremariam

Masterstudent i klinisk ernæring
Christian Johansen

Samtykkeerklæring

FORELDRE

Vi har lest informasjonsskrivet, og vi er villige til å la vår sønn/datter få delta.

(Signert av foreldre til prosjektdeltaker, dato)

Elevens for- og etternavn: (Skriv tydelig, helst med blokkbokstaver)

.....

DOCUMENTS FOR STUDENTS

Vil du være med i forskningsprosjektet vårt?

«Takle sosioøkonomiske forskjeller i vektutvikling hos ungdommer» (TACKLE)

Dette er en invitasjon til deg om å delta i et forskningsprosjekt hvor vi skal teste spørsmål som senere skal brukes til en spørreundersøkelse. Din skoleklasse er valgt ut, fordi dere er like gamle som elevene som skal delta i spørreundersøkelsen senere.

Det er frivillig å delta i studien, og du kan trekke deg når som helst uten å oppgi noen grunn. Dette arket forteller hva prosjektet handler om, og hva vi planlegger å gjøre.

Formål

Våren 2020 skal forskere ved universitetet i Oslo invitere elever i 7.klasse ved 30 skoler i Oslo til en spørreundersøkelse. Målet er å lære mer om ungdommers vaner rundt mat og fysisk aktivitet.

Før vi kan starte den undersøkelsen, må vi vite at spørsmålene er enkle å forstå og enkle å svare på. Dette vil vi gjøre ved å invitere elever fra en syvendeklasse ved en skole utenfor Oslo, be de svare på spørsmålene som skal brukes senere, og be de fortelle hva de synes om spørsmålene.

Hvem er ansvarlig for forskningsprosjektet?

Avdeling for ernæringsvitenskap ved Universitetet i Oslo er ansvarlig for prosjektet. Studien ledes av forsker Mekdes Gebremariam og professor Nanna Lien. Testingen av spørreskjemaet inngår i en mastergradsoppgave i klinisk ernæring ved Universitetet i Oslo. Prosjektet er et samarbeidsprosjekt mellom Universitetet i Oslo, Norges Idrettshøgskole, Universitetet i Bergen, Folkehelseinstituttet og University of California, Los Angeles

Hvorfor får du spørsmål om å delta?

Du får spørsmål om å være med, fordi du går i syvendeklasse på en skole utenfor Oslo. For at du kan delta i denne spørreundersøkelsen må dine foreldre eller foresatte skrive under på et samtykkeskjema. Du vil få dette skjemaet av læreren din.

Hva innebærer det for deg å delta?

Hvis du vil være med i prosjektet, vil vi be deg og de andre elevene i klassen din fylle ut et papirbasert spørreskjema i en skoletime denne høsten. Spørreskjemaet inneholder spørsmål om mat og fysisk aktivitet. Dette vil ta 30-45 minutter. Det er hvordan du opplever å svare på

spørsmålene som er viktig for oss.

Etterpå vil vi invitere 8-10 av elevene som var med på undersøkelsen til en gruppesamtale hvor vi snakker om spørsmålene og hva dere synes. **Det vil bli gjort lydopptak av gruppesamtale. Det er kun masterstudenten som vil høre på lydopptakene.**

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke deg fra studien uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til det vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er kun autorisert personell knyttet til prosjektet som har adgang til person identifiserbare data.

Kontaktopplysningene vil vi erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data. Det er kun autorisert personell knyttet til prosjektet som har tilgang på navnelistene. **Det er kun masterstudenten som vil høre på lydopptakene av gruppesamtale.**

Lydfilen vil bli lagret på en forskningsserver som er passordbeskyttet. The file will be deleted once the content has been transcribed. Du vil ikke kunne bli gjenkjent i det som gjøres offentlig tilgjengelig av resultater fra studien.

Du vil ikke kunne gjenkjennes i skriftlig resultater som offentliggjøres fra studien.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes våren 2022. De innsamlende data vil bli anonymisert. All innsamlet data fra denne studien vil bli behandlet konfidensielt.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt og dine foreldres samtykke.

På oppdrag fra Universitetet i Oslo har NSD – Norsk senter for forskningsdata AS - vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Forsker Mekdes Gebremariam på tlf. 22 85 eller e-post mekdes.gbremariam@medisin.uio.no
- Professor Nanna Lien på tlf: 22 85 13 72 eller e-post nanna.lien@medisin.uio.no
- Personvernombud ved UiO. E-post: personvernombud@uio.no
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17

Med vennlig hilsen

Prosjektansvarlig
Mekdes Gebremariam

Masterstudent
Christian Johansen

DOCUMENTS FOR PARENTS

Kjære foreldre til elever på 7.trinn

Forespørsel om deltakelse i forskningsprosjektet

Takle sosioøkonomiske forskjeller i vektutvikling hos ungdommer (TACKLE)

Dette er en forespørsel til deg som foresatt om ditt barn kan delta i et forskningsprosjekt i regi av UIO, hvor formålet er å tilpasse og finjustere en spørreundersøkelse om kostholdsvaner og fysisk aktivitet rettet mot ungdom.

Hovedmålet med TACKLE-studien er å kartlegge viktige faktorer som påvirker kostholdsvaner, fysisk aktivitet og stillesittende atferd blant ungdom. Studien vil også utforske faktorer som forklarer forskjeller i vaner blant ulike sosioøkonomiske grupper. Resultatene fra studien vil gi verdifull informasjon som skal brukes til å utvikle grep og tiltak som fremmer sunne kostvaner og fysisk aktivitet, samt reduserer stillesitting blant ungdom. Som en del av forberedelsene til undersøkelsen ønsker vi å gjennomføre en test-retest av våre spørsmål, på ungdommer i tilsvarende aldersgruppe i løpet av høsten 2019. Målet er å avklare om spørsmålene vi har valgt ut er tydelige og formulert slik at samme person vil gi likt svar hver gang, uavhengig av antall ganger spørsmålet blir stilt.

Hvem er ansvarlig for forskningsprosjektet?

Avdeling for ernæringsvitenskap ved Universitetet i Oslo er ansvarlig for prosjektet. Studien ledes av forsker Mekdes Gebremariam og professor Nanna Lien. Prosjektet er et samarbeidsprosjekt mellom Universitetet i Oslo, Norges Idrettshøgskole, Universitetet i Bergen, Folkehelseinstituttet og University of California, Los Angeles.

Hvorfor får du spørsmål om å delta?

Du får denne forespørselen som forelder til ett eller flere barn i syvendeklasse ved en skole i nærheten av Oslo. Det er planlagt å gjennomføre spørsmåls-testingen i løpet av høsten 2019.

Hva innebærer det for ditt barn?

Datainnsamlingen vil gjøres ved hjelp av et elektronisk spørreskjema (Nettskjema), som vil fylles ut på PCer på skolen. Spørreskjemaet handler om kostholdsvaner (inkludert noen få spørsmål om foreldres kostholdsvaner), fysisk aktivitet og stillesittende tid, og faktorer som kan påvirke disse atferdene. Elevene vil bruke ca. 45-60 minutter på å fylle ut skjemaet. Etter utfylling av spørreskjemaet vil vi la det gå 14 dager, før vi vender tilbake til skolen og ber elevene fylle ut det samme spørreskjemaet en gang til.

Det er frivillig å delta

Det er frivillig å delta i studien, og ditt barn kan når som helst trekke sitt samtykke uten å oppgi noen grunn. Dersom ditt barn trekker seg, vil alle opplysninger om han/henne bli anonymisert. Dette vil heller ikke få konsekvenser for ditt barns videre skolegang. Dersom dere aksepterer at ditt barn deltar i prosjektet, skriver dere under samtykkeerklæringen på siste side. Dersom dere sier ja til å delta, kan dere senere trekke samtykkeerklæringen uten noen konsekvenser.

Personvern – hvordan vi oppbevarer og bruker opplysninger om ditt barn

Vi vil bare bruke opplysningene om ditt barn til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Alle skjema vil bli avidentifisert, som betyr at navn og andre personopplysninger som kan kobles til eleven fjernes. Identifiserbare opplysninger som knytter eleven til opplysninger erstattes med en kode. Lister som kobler kode og navn skal oppbevares på en sikker måte, atskilt fra resten av datamaterialet. Det er kun autorisert personell knyttet til prosjektet som har tilgang på navnelistene.

Hva skjer med opplysningene om ditt barn når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes April 2022. De innsamlede data vil bli anonymiserte, og all innsamlet data vil bli behandlet konfidensielt.

Dine rettigheter

Så lenge ditt barn kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om barnet,
- å få rettet personopplysninger om ditt barn,
- få slettet personopplysninger om ditt barn,
- få utlevert en kopi av personopplysninger om ditt barn (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av ditt barns personopplysninger.

Hva gir oss rett til å behandle personopplysninger om ditt barn?

Vi behandler opplysninger om ditt barn basert på ditt og barnets samtykke.

På oppdrag fra Universitetet i Oslo har NSD – Norsk senter for forskningsdata AS - vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Forsker Mekdes Gebremariam på tlf. 22 85 11 11 eller e-post mekdes.gebremariam@medisin.uio.no
- Professor Nanna Lien på tlf: 22 85 13 72 eller e-post nanna.lien@medisin.uio.no
- Personvernombud ved UiO. E-post: personvernombud@uio.no
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17

Med vennlig hilsen

Prosjektansvarlig
Mekdes Gebremariam

Masterstudent i klinisk ernæring
Christian Johansen

Samtykkeerklæring

FORELDRE

Vi har lest informasjonsskrivet, og vi er villige til å la vår sønn/datter få delta.

(Signert av foreldre til prosjektdeltaker, dato)

Elevens for- og etternavn: (Skriv tydelig, helst med blokkbokstaver)

.....

Vi ber om svar på de følgende spørsmålene, da det erfaringsmessig er vanskelig for elevene å svare på spørsmål om foresattes utdanningsnivå.

Foresatte 1:

1a. Hvilken relasjon har denne foresatte til barnet som blir med i undersøkelsen? utdanning?

- Moren til barnet
- Faren til barnet (7-9 år)
- Stemoren til barnet
- Stefaren til barnet (år)
- Barnets kvinnelige foresatte enn 4 år)
- Barnets mannlige foresatte

1b. Hva er denne foresattes høyeste fullførte

- Mindre enn 7 års utdanning
- Folkeskole/grunnskole/ungdomsskole
- Gymnas/yrkesskole e.l. (inntil 12 år)
- Universitet-/høyskoleutdanning (inntil 4
- Universitet-/høyskoleutdanning (mer

Foresatte 2:

2a. Hvilken relasjon har denne foresatte til barnet som blir med i undersøkelsen? utdanning?

- Moren til barnet
- Faren til barnet (7-9 år)
- Stemoren til barnet
- Stefaren til barnet (år)
- Barnets kvinnelige foresatte enn 4 år)
- Barnets mannlige foresatte

2b. Hva er denne foresattes høyeste fullførte

- Mindre enn 7 års utdanning
- Folkeskole/grunnskole/ungdomsskole
- Gymnas/yrkesskole e.l. (inntil 12 år)
- Universitet-/høyskoleutdanning (inntil 4
- Universitet-/høyskoleutdanning (mer

DOCUMENTS FOR STUDENTS

Vil du være med i forskningsprosjektet vårt?

«*Takle sosioøkonomiske forskjeller i vektutvikling hos ungdommer*» (TACKLE)

Dette er en invitasjon til deg om å delta i et forskningsprosjekt hvor vi skal teste spørsmål som senere skal brukes til en stor spørreundersøkelse i Oslo. Dette arket forteller hva prosjektet handler om, og hva vi planlegger å gjøre.

Formål

Våren 2020 skal forskere ved universitetet i Oslo invitere elever i 7.klasse ved 30 skoler i Oslo til en spørreundersøkelse. Målet er å lære mer om ungdommers vaner rundt mat og fysisk aktivitet.

Før vi kan starte den undersøkelsen, må vi vite at spørsmålene vi har lyst til å bruke er enkle å forstå og enkle å svare på. Dette vil vi undersøke ved å invitere elever fra syvendeklasser ved skoler utenfor Oslo, be de fylle ut spørreundersøkelsen vår, før vi kommer tilbake to uker etterpå og ber de fylle ut den samme undersøkelsen en gang til.

Hvem er ansvarlig for forskningsprosjektet?

Avdeling for ernæringsvitenskap ved Universitetet i Oslo er ansvarlig for prosjektet. Studien ledes av forsker Mekdes Gebremariam og professor Nanna Lien. Det er et samarbeidsprosjekt mellom Universitetet i Oslo, Norges Idrettshøgskole, Universitetet i Bergen, Folkehelseinstituttet og University of California, Los Angeles

Hvorfor får du spørsmål om å delta?

Du får spørsmål om å være med, fordi du går i syvendeklasse på en skole utenfor Oslo. For at du kan delta i denne spørreundersøkelsen må dine foreldre eller foresatte skrive under på et samtykkeskjema. Du vil få dette skjemaet av læreren din.

Hva innebærer det for deg å delta?

Hvis du vil være med i prosjektet, vil vi be deg og de andre elevene i klassen din fylle ut et spørreskjema på PC/nettbrett i en skoletime denne høsten. Spørreskjemaet inneholder spørsmål om mat og fysisk aktivitet. Denne vil ta ca. 30-45 minutter å fylle ut og vil skje på skolen. To uker etterpå vil dere fylle ut den samme undersøkelsen en gang til. Dette vil også skje på skolen.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke deg fra studien uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til det vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er kun autorisert personell knyttet til prosjektet som har adgang til person identifiserbare data.

Kontaktopplysningene vil vi erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data. Det er kun autorisert personell knyttet til prosjektet som har tilgang på navnelistene.

Du vil ikke kunne gjenkjennes i skriftlig resultater som offentliggjøres fra studien.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes April 2022. De innsamlende data vil bli anonymisert. All innsamlet data fra denne studien vil bli behandlet konfidensielt.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt og dine foreldres samtykke.

På oppdrag fra Universitetet i Oslo har NSD – Norsk senter for forskningsdata AS - vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Forsker Mekdes Gebremariam på tlf. 22 85 11 11 eller e-post mekdes.gebremariam@medisin.uio.no
- Professor Nanna Lien på tlf: 22 85 13 72 eller e-post nanna.lien@medisin.uio.no
- Personvernombud ved UiO. E-post: personvernombud@uio.no
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17

Med vennlig hilsen

Prosjektansvarlig
Mekdes Gebremariam

Masterstudent
Christian Johansen

DOCUMENTS FOR PRINCIPALS

Forespørsel om deltakelse i forskningsprosjektet

Takle sosioøkonomiske forskjeller i vektutvikling hos ungdommer (TACKLE)

Dette er en forespørsel til din skole om å delta i et forskningsprosjekt i regi av Universitetet i Oslo, hvor formålet er å tilpasse og finjustere en spørreundersøkelse om kostholdsvaner og fysisk aktivitet rettet mot ungdom.

Dette skrivet inneholder informasjon om hva vi ønsker å oppnå med prosjektet, og hva deltakelse vil innebære for skolen.

Formål

Hovedmålet med TACKLE-studien er å kartlegge viktige faktorer som påvirker kostholdsvaner, fysisk aktivitet og stillesittende atferd blant ungdom. Studien vil også utforske faktorer som forklarer forskjeller i disse vanene blant ungdom med ulik sosioøkonomisk bakgrunn. Resultatene fra studien vil gi verdifull informasjon som skal brukes til å utvikle grep og tiltak som fremmer sunne kostvaner og fysisk aktivitet, samt reduserer stillesitting blant ungdom.

TACKLE vil gjennomføres i løpet av våren 2020, hvor elever i syvendeklasse ved totalt 30 skoler i Oslo-området vil inviteres.

Som en del av forberedelsene til undersøkelsen ønsker vi å gjennomføre en test-retest av spørsmålene vi planlegger å bruke, på en gruppe ungdommer i tilsvarende aldersgruppe i løpet av høsten 2019. Målet med denne test-retesten er å analysere spørreskjemaets pålitelighet, og kunne avdekke om spørsmålene er utformet slik at vi kan forvente at det gir oss samme svar hver gang det besvares.

Dette tiltaket vil bidra til at spørreundersøkelsen holder høy kvalitet, at svarene vi får i liten grad skyldes tilfeldigheter eller feilkilder, og at konklusjonene vi trekker senere kan brukes til å designe gode tiltak som har god effekt.

Hvem er ansvarlig for forskningsprosjektet?

Avdeling for ernæringsvitenskap ved Universitetet i Oslo er ansvarlig for prosjektet. Studien ledes av forsker Mekdes Gebremariam og professor Nanna Lien. Test-retest av spørreskjemaet inngår i en masteroppgave i klinisk ernæring ved Universitetet i Oslo. Prosjektet er del av et større forskningsprosjekt finansiert av Norges Forskningsråd. Det er et samarbeidsprosjekt mellom Universitetet i Oslo, Norges Idrettshøgskole, Universitetet i Bergen, Folkehelseinstituttet og University of California, Los Angeles.

Hvorfor får du spørsmål om å delta?

Du får denne forespørselen om deltakelse fordi skolen din har elever i syvende klasse og befinner seg utenfor Oslo. Vi ønsker å invitere samtlige elever i 2-3 skoleklasser på syvende trinn til denne testen, og planlegger å gjennomføre denne i løpet av høsten 2019.

Hva innebærer det for skolen å delta?

Denne test-retesten vil foregå over totalt 2 skoletimer, med ca 14 dager mellom hver time. I timen skal elevene fylle ut et digitalt spørreskjema på PC, og dette vil ta mellom 30-45 minutter å fylle ut. Resultatene fra spørreskjemaet vil bli lagret digitalt.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om skolen din vil da bli anonymisert.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om elever til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket. Det er kun autorisert personell knyttet til prosjektet som har adgang til person identifiserbare data. Kontaktopplysningene vil vi erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes April 2022. De innsamlende data vil bli anonymisert. All innsamlet data fra denne studien vil bli behandlet konfidensielt.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

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- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg/din skole?

Vi behandler opplysninger om deg/din skole basert på ditt samtykke.

På oppdrag fra Universitetet i Oslo har NSD – Norsk senter for forskningsdata AS - vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- Forsker Mekdes Gebremariam på tlf. 22 85 13 71 eller e-post mekdes.gebremariam@medisin.uio.no
- Professor Nanna Lien på tlf: 22 85 13 72 eller e-post nanna.lien@medisin.uio.no
- Personvernombud ved UiO. E-post: personvernombud@uio.no
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17

Dersom du har lest og forstått informasjonsskrivet og ønsker deltakelse i prosjektet for din skole, kan du signere «samtykkeerklæring» på neste side. Send bilde per SMS eller epost av utfylt samtykkeskjema til forskningsassistent Oda Kaupang (tlf.: 98417470 e-post:

o.b.kaupang@medisin.uio.no) snarest mulig.

Med vennlig hilsen
Prosjektansvarlig

Masterstudent

Mekdes Gebremariam

Christian Johansen

Samtykkeerklæring

REKTOR

Jeg har fått informasjon om prosjektet og har fått anledning til å stille spørsmål. Jeg gir samtykke i at skole skal delta i studien.

(Signert av rektor, dato)

Spørreskjema elever

Takk for at du hjelper oss med å svare på disse spørsmålene om kosthold, fysisk aktivitet og stillesittende atferd.

Det er frivillig å svare på disse spørsmålene, og alle svarene du gir er hemmelige. Ingen på skolen din, eller andre du kjenner, får vite hva du har svart.

Spørsmål som er markert med stjerne (*) er obligatoriske og må svares på før du kan gå videre. Hvis du er usikker på hva du skal svare, velg det du tror er mest riktig.

Lykke til!

1. Skolens navn *

2. ID-nummer *


3. Er du jente eller gutt *

- Jente
- Gutt

4. Hvilket år er du født *

- 2006
- 2007
- 2008
- 2009
- Annet år

Skriv året du er født *

-  Dette elementet vises kun dersom alternativet «Annet år» er valgt i spørsmålet «4. Hvilket år er du født»

5. I hvilken måned har du fødselsdag? *

6. I hvilket land er du født?

- Norge
- Annet land

i Dette elementet vises kun dersom alternativet «Annet land» er valgt i spørsmålet «6. I hvilket land er du født?»

Velg ...

7. I hvilket land er moren din født?

- Norge
- Annet land

i Dette elementet vises kun dersom alternativet «Annet land» er valgt i spørsmålet «7. I hvilket land er moren din født?»

Velg ...

8. I hvilket land er faren din født?

- Norge
- Annet land

i Dette elementet vises kun dersom alternativet «Annet land» er valgt i spørsmålet «8. I hvilket land er faren din født?»

Velg ...

9. Hvilke voksne bor du vanligvis med?

Med foresatt mener vi en voksen som har ansvaret for deg

- To foresatte/foreldre hele tiden
- Bare mor/bare far/bare én foresatt
- Jeg bytter på å bo hos en av mine foreldre/foresatte
- Andre voksne

FYSISK AKTIVITET

De neste spørsmålene handler om fysisk aktivitet. Fysisk aktivitet kan være å gå (f.eks. til skolen), å løpe, eller å bevege seg mye rundt. Det kan også være sykling, dansing, idrett og utendørs lek som innebærer å bevege seg mye rundt.

1. I løpet av en typisk eller vanlig uke, på hvor mange dager er du vanligvis fysisk aktiv i minst 60 minutter per dag?

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

2. I løpet av de 7 siste dagene, på hvor mange dager var du fysisk aktiv i minst 60 minutter per dag?

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

3. Hvor mange dager i uka går eller sykler du TIL skolen på denne årstiden?

- Ingen, jeg blir kjørt med bil/motorsyssel, eller tar kollektivtrafikk
- Ingen, jeg bruker selvbalerende kjøretøy (f.eks. classy walk/air wheel) eller elektrisk sparkesyssel
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager

5. Hvor mange dager i uka går eller sykler du FRA skolen på denne årstiden?

- Ingen, jeg blir kjørt med bil/motorsykel, eller tar kollektivtrafikk
- Ingen, jeg bruker selvbalanserende kjøretøy (f.eks. classy walk/air wheel) eller elektrisk sparkesykkel
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager

7. Er du medlem av et idrettslag eller idrettsklubb?

Idrett er f.eks. dansing, fotball, friidrett, langrenn

- Ja
- Nei

8. Er du medlem av andre organiserte grupper hvor du driver med idrett?

F.eks. organisert av frivillige organisasjoner som Røde kors, eller organisert av skolen

- Ja
- Nei

9. Svar på påstandene nedenfor fra helt enig til helt uenig, etter hva som passer best for deg.

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Jeg greier å være fysisk aktiv de fleste dager	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg greier å spørre foreldrene mine eller andre voksne om å trene, leke eller drive med idrett sammen med meg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg greier å være fysisk aktiv de fleste dager, selv om det er dårlig vær ute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg greier å få med meg vennene mine på fysisk aktivitet de fleste dager	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Hvor ofte trener, leker eller driver du med idrett/fysisk aktivitet med vennene dine?

Når vi sier venner så mener vi både venner på skolen og venner utenfor skolen

- Nesten aldri eller aldri
- 1 eller 2 ganger i uken
- 3 eller 4 ganger i uken
- Nesten hver dag
- Hver dag

11. Hvor ofte gjør din mor eller far dette:

	Nesten aldri eller aldri	1 eller 2 ganger i uken	3 eller 4 ganger i uken	Nesten hver dag	Hver dag
Tar deg med for å trene eller drive med idrett	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ser på at du deltar i trening eller idrett	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trener eller driver med idrett sammen med deg	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Oppmuntrer deg til å være i fysisk aktivitet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

NABOLAGET DITT

De neste spørsmålene handler om nabolaget ditt. Et nabolag er området du bor i, og områder som ligger innen en 15-20 minutters gåavstand fra ditt hjem.

1. De neste spørsmålene handler om dine foreldres regler for å være ute i nabolaget

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Foreldrene mine gir meg ikke lov til å gå/sykle/leke alene i vårt nabolag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreldrene mine gir meg ikke lov til å gå/sykle/leke med venner i vårt nabolag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Foreldrene mine gir meg ikke lov til å være ute når det er mørkt (kveld/natt)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Hvor enig eller uenig er du i at følgende påstander hindrer deg i å være fysisk aktiv?

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Jeg har ingen steder å dra til for å være fysisk aktiv i mitt nabolag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Frukt-og grønt butikk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kjøpesenter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sånn ca. hvor lang tid ville det tatt for deg å gå fra ditt hjem til det nærmeste stedet som står skrevet nedenfor? Marker tiden det ville tatt deg å gå til hvert sted, selv om det er et sted du ikke vanligvis drar til.

	1-5 minutter	6-10 minutter	11-20 minutter	21-30 minutter	31 minutter eller mer	Vet ikke
Skole	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gatekjøkken (f.eks. McDonalds, kebabsjappe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Café	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Restaurant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buss, t-bane, trikk eller togstopp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Fritidssteder i ditt nabolag

Sånn ca. hvor lang tid ville det tatt for deg å gå fra ditt hjem til det nærmeste stedet som står skrevet nedenfor? Marker tiden det ville tatt deg å gå til hvert sted, selv om det er et sted du ikke vanligvis drar til.

	1-5 minutter	6-10 minutter	11-20 minutter	21-30 minutter	31 minutter eller mer	Vet ikke
Innendørshall, eller treningsstudio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strand, sjø, vann, tjern, elv eller bekk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sykkel-/turstier/gangveier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fotballbane/ballbinge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Andre idrettsbaner/områder (som løpebane, tennisbane, skateparker osv.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sånn ca. hvor lang tid ville det tatt for deg å gå fra ditt hjem til det nærmeste stedet som står skrevet nedenfor? Marker tiden det ville tatt deg å gå til hvert sted, selv om det er et sted du ikke vanligvis drar til.

1-5 minutter	6-10 minutter	11-20 minutter	21-30 minutter	31 minutter eller mer	vet ikke
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Park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lekeplass eller offentlig åpen plass (gress, eller sand/jord), som ikke er en park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skog/marka	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Svar på påstandene nedenfor fra helt enig til helt uenig, etter hva som passer best for deg og ditt nabolag

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Det er butikker (matbutikk, kiosk, bensinstasjon) innen enkel gåavstand fra mitt hjem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det er fast food steder (f.eks. kebabsjappe, McDonalds) innen enkel gåavstand fra mitt hjem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Sikkerhet i nabolaget

Marker svaret som passer best for deg og ditt nabolag.

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Det er så mye trafikk i gatene i nærheten av mitt hjem, at det gjør det vanskelig eller ubehagelig å gå (alene eller med noen)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trafikkhastigheten i de fleste gatene som ligger i nærheten av mitt hjem er vanligvis lav (30km/t eller mindre)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gatene i mitt nabolag har god belysning om kvelden/natten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det er fotgjengeroverganger og trafikkllys/signaler for å hjelpe gående med å krysse gater med mye trafikk i mitt nabolag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Det er sykkelveier i gatene i mitt nabolag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9. Kriminalitet

Marker svaret som passer best for deg og ditt nabolag.

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Det er høy kriminalitet i nabolaget mitt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Kriminaliteten i mitt nabolag gjør det utrygt å gå langs gatene (alene eller med noen)

Jeg er redd for å være eller å gå i nabolaget mitt og gater som ligger i nærheten av mitt hjem (alene eller med noen), fordi jeg er redd for å bli tatt eller skadet av en fremmed

Jeg er redd for å bruke fritidsområdene (f.eks. park eller fotballbaner) i mitt nabolag fordi jeg er redd for å bli tatt eller skadet av en fremmed

10. Fritidssteder i ditt nabolag

I ditt nabolag, hvor ofte bruker du stedene som står skrevet nedenfor? (UTENOM skoletid) Marker svaret som passer best for deg.

	Aldri	En gang i måneden eller mindre	Annenhver uke	En til to ganger i uka	Tre ganger i uka eller mer
Innendørshall, eller treningsstudio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
strand, innsjø, elv eller bekk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sykkel-/turstier/gangveier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
fotballbane/ballbinge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
andre idrettsbaner/områder (som løpebane, tennisbane, skateparker osv.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I ditt nabolag, hvor ofte bruker du stedene som står skrevet nedenfor? (UTENOM skoletid) Marker svaret som passer best for deg.

	Aldri	En gang i måneden eller mindre	Annenhver uke	En til to ganger i uka	Tre ganger i uka eller mer
skole med lekeapparater/idrettsbaner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
lekeplass eller offentlig åpen plass (gress, eller sand/jord), som ikke er en park	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
skog/marka	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. Det er store åpne områder rundt mitt hus/nabolag hvor jeg kan være fysisk aktiv
(Kan være hage eller fellesområde i borettsaget)

- Helt uenig
- Litt uenig
- Verken enig eller uenig
- Litt enig
- Helt enig

KOSTHOLDSVANER

De neste spørsmålene handler om mat og drikke. Vi er klar over at det er forskjell fra dag til dag. Prøv derfor så godt du kan å gi et "gjennomsnitt". Der du er usikker, svar det du tror passer best.

1. Hvor ofte spiser du vanligvis FRISK FRUKT?

- Aldri/sjeldent
- Mindre enn 1 gang i uken
- 1-2 ganger per uke
- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger per dag
- 3 ganger eller mer per dag

2. Hvor ofte spiser du vanligvis RÅ GRØNNSAKER? (f.eks. gulrot, tomat, salat)

- Aldri/sjeldent
- Mindre enn 1 gang i uken
- 1-2 ganger per uke
- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger per dag
- 3 ganger eller mer per dag

3. Hvor ofte spiser du vanligvis VARME GRØNNSAKER (IKKE poteter)?

- Aldri/sjeldent
- Mindre enn 1 gang i uken
- 1-2 ganger per uke
- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger per dag
- 3 ganger eller mer per dag

4. Hvor ofte spiser du vanligvis SJOKOLADE, GODTERI ELLER IS?

- Aldri/sjeldent
- Mindre enn 1 gang i uken
- 1-2 ganger per uke
- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger eller mer per dag

5. Hvor ofte spiser du vanligvis BOLLER, MUFFINS ELLER SØTE KJEKS?

- Aldri/sjeldent
- Mindre enn 1 gang i uken
- 1-2 ganger per uke
- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger eller mer per dag

6. Hvor ofte spiser du vanligvis SALT SNACKS? (f.eks. potetgull, popcorn og lignende)

- Aldri/sjeldent
- Mindre enn 1 gang i uken
- 1-2 ganger per uke

- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger eller mer per dag

7. I løpet av de siste 7 dagene: Hvor mange av disse dagene kjøpte eller spiste du fast food på f.eks. McDonalds, Burger King, Narvesen, kebabsjappe? (f.eks. hamburger, pølser, pommefrittes)

- 0 dager
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- 6 dager
- 7 dager

8. I gjennomsnitt, hvor ofte spiser du fast food? (f.eks. hamburger, kebab, pølser)

- Aldri/sjeldent
- Annenhver uke
- 1-2 ganger per uke
- 3-4 ganger per uke
- 5-6 ganger per uke
- 1 gang per dag
- 2 ganger eller mer per dag

9. I en vanlig skoleuke fra mandag til fredag, hvor mange dager spiser du frokost?

Når vi sier frokost, mener vi det første du spiser og drikker innen to timer etter at du har stått opp om morgenen. Dette kan være hjemme, på vei til skolen eller rett før skolen begynner. I helgen er frokost det du spiser/drikker før klokka 11.

- Jeg spiser aldri frokost på skoledagene
- 1 dag
- 2 dager
- 3 dager

- 4 dager
- 5 dager

10. Hvor ofte spiser du frokost i helgene (lørdag og søndag)?

- Jeg spiser aldri frokost i helgene
- Jeg spiser vanligvis frokost lørdag eller søndag
- Jeg spiser vanligvis frokost både lørdag og søndag

NÅ KOMMER NOEN SPØRSMÅL OM HVA DU DRIKKER PÅ HVERDAGER

11.a På HVERDAGER (mandag til og med fredag), hvor ofte drikker du vanligvis brus MED sukker (f.eks. Cola, Solo)?

Hvor ofte fra mandag til fredag?

- Aldri/sjeldent
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager

11.b På HVERDAGER (mandag til og med fredag), hvor ofte drikker du vanligvis energidrikk (f.eks. Red Bull, Monster)?

Hvor ofte fra mandag til fredag?

- Aldri/sjeldent
- 1 dag
- 2 dager
- 3 dager
- 4 dager
- 5 dager
- Hver hverdag

11.c På HVERDAGER (mandag til og med fredag), hvor ofte drikker du vanligvis saft MED sukker (f.eks. husholdningssaft/appelsinsaft)?

Hvor ofte fra mandag til fredag?

Boks (0,25l)



Boks (0,5l)



12c. Når du drikker saft MED sukker på hverdager, hvor MANGE glass drikker du vanligvis?



Dette elementet vises kun dersom alternativet «5 dager», «4 dager», «1 dag», «3 dager» eller «2 dager» er valgt i spørsmålet «11.c På HVERDAGER (mandag til og med fredag), hvor ofte drikker du vanligvis saft MED sukker (f.eks. husholdningssaft/appelsinsaft)?»

Fyll inn antall glass (0,25l) som du vanligvis drikker på en hverdag når du drikker saft med sukker.



- Ingen
- 1
- 2
- 3
- 4 eller flere

NÅ KOMMER NOEN SPØRSMÅL OM HVA DU DRIKKER I HELGEN

13a. Hvor MANGE glass, brusbokser eller flasker brus MED sukker drikker du vanligvis i helgen?

Legg sammen det du pleier å drikke på lørdager og søndager.

Ingen 1 2 3 4 5 eller flere

Glass (0,25l)



Bokser (0,33l)





Flasker (0,5l)



13b. Hvor MANGE bokser energidrikk drikker du vanligvis i helgen?

Legg sammen det du pleier å drikke på lørdager og søndager.

	Ingen	1	2	3	4	5 eller flere
Boks (0,25l) 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Boks (0,5l) 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13c. Hvor MANGE glass saft MED sukker drikker du vanligvis i helgen?

Legg sammen det du pleier å drikke på lørdager og søndager. 1 glass (0,25l).

	Ingen	1	2	3	4 eller flere
Saft MED sukker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14. Hvor enig eller uenig er du i påstandene nedenfor?

Når jeg selv kan velge hva jeg vil spise...

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
...synes jeg det er vanskelig å velge mat med lavt fettinnhold (f.eks. frukt i stedet for potetgull, eller lettmeik i stedet for helmelk)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...synes jeg det er enkelt å velge et sunt mellommåltid (f.eks. frukt eller lettyoghurt)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...tror jeg at jeg har kunnskap og ferdigheter til å velge/lage sunn snacks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...synes jeg det er vanskelig å velge sunne måltider/snacks når jeg er sammen med venner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. De neste utsagnene handler om hvilke grenser foreldrene dine setter for inntak av ulik type mat

Sett et kryss fra "ikke i det hele tatt, til "veldig"

	Ikke i det hele tatt 1	2	3	4	Veldig 5
Mine foreldre setter klare grenser for hvor mye sukkerholdig drikke (som brus, saft osv.) jeg får drikke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine foreldre setter klare grenser for hvor mye søtsaker (sjokolade, is krem, kjeks, kaker, boller osv.) jeg får spise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine foreldre setter klare grenser for hvor mye salt snacks (potetgull, salte peanøtter osv.) jeg får spise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine foreldre setter klare grenser for hvor mye fast food jeg får spise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Foreldrene mine har regler for om jeg må spise frokost

- Helt uenig
- Litt uenig
- Verken enig eller uenig
- Litt enig
- Helt enig

17. Hvor enig eller uenig er du i følgende påstander (sett ett kryss på hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Hjemme hos oss varierer vi typer grønnsaker som blir servert til middag i løpet av en uke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss varierer vi hvordan grønnsaker forberedes til middag (rå, varmet osv.) i løpet av en uke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss har vi vanligvis grønnsaker til middag hver dag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss er det vanligvis grønnsaker jeg liker tilgjengelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Hvor enig eller uenig er du i følgende påstander (sett ett kryss på hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hjemme hos oss har vi vanligvis brus med sukker til middag i helgedager

Hjemme hos oss er det vanligvis brus med sukker tilgjengelig

Hjemme hos oss har vi vanligvis brus med sukker til middag i ukedager

19. Hvor enig eller uenig er du i følgende påstander (sett ett kryss på hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Hjemme hos oss har vi vanligvis frukt jeg liker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss varierer hva slags frukt vi har i løpet av uken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss synes jeg det er enkelt å finne og spise frukt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

20. Hvor enig eller uenig er du i følgende påstander (sett ett kryss for hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Hjemme hos oss har vi vanligvis søt og salt snacks (f.eks. sjokolade, godteri, is, potetgull, muffins, boller) tilgjengelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss har det nesten alltid vært lett for meg å finne søt og salt snacks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. Hvor enig eller uenig er du i følgende påstander (sett ett kryss for hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Hjemme hos oss har vi vanligvis frokostmat tilgjengelig (brød, frokostblandinger, melk) tilgjengelig	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hjemme hos oss har det nesten alltid vært lett for meg å finne frokostmat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Hvor enig eller uenig er du i følgende påstander (sett ett kryss for hver linje)

Hvis påstanden ikke er relevant for deg, gå videre til neste

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Moren min spiser frukt hver dag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Faren min spiser frukt hver dag

Moren min spiser grønnsaker hver dag

Faren min spiser grønnsaker hver dag

Moren min spiser frokost hver dag

Faren min spiser frokost hver dag

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23. Hvor enig eller uenig er du i følgende påstander (sett ett kryss for hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Moren min drikker brus med sukker flere ganger i uken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faren min drikker brus med sukker flere ganger i uken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moren min spiser fettholdig eller søt snacks flere ganger i uken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faren min spiser fettholdig eller søt snacks flere ganger i uken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. Hvor enig eller uenig er du i følgende påstander (sett ett kryss for hver linje)

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Moren min synes at jeg burde spise sunt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moren min spiser sunt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faren min synes at jeg skal spise sunt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Faren min spiser sunt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25. Hvor enig eller uenig er du i følgende påstander om butikker hvor du kjøper mat og drikke i nærheten av din skole/ i ditt nabolag:

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Det er lett å få tak i et stort og variert utvalg av fersk frukt og grønnsaker som jeg liker	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Det er lett å få tak i et stort og variert utvalg av søt og salt snacks (sjokolade, potetgull, muffins, kjeks eller lignende) som jeg liker

Det er lett å få tak i et stort utvalg av drikke med sukker som jeg liker

Det er billigere å kjøpe brus med sukker eller snacks (f.eks. potetgull eller kjeks) enn å kjøpe frukt og grønnsaker

26. Hvor ofte handler du vanligvis mat/drikke i butikker (matbutikk, kiosk, bensinstasjon) rundt skolen din eller nabolaget ditt?

- Det er ingen butikker
- Aldri
- Én gang i uken
- To ganger per uke
- 3 ganger per uke
- 4 ganger per uke
- Hver dag

27. Hvor mye penger bruker du per uke på å kjøpe mat og/eller drikke

- Jeg bruker ingen penger
- 50 kr eller mindre
- 51-100 kr
- 101-150 kr
- 151-200 kr
- Mer enn 200 kr

28. Hvor ofte kjøper du mat fra skolekantine/matbod?

- Vi har ingen skolekantine/matbod
- Aldri
- Én gang i måneden
- Annenhver uke
- Én gang i uken

Sosiale medier eller andre kommunikasjonsstyper (f.eks. Snapchat, Instagram)

Annet (f.eks. lage musikk- eller stopmotion film)

Hvis du har et annet svar, gi eksempel på hva:

2. I løpet av den siste måneden, hvor mye tid har du vanligvis brukt på en typisk helgedag på følgende skjermaktiviteter på fritiden?

Gi et svar i hver linje - for en typisk helgedag (tid per dag lørdag/søndag)

	Ingen	1-15 minutter	15-30 minutter	30-60 minutter	1-2 timer	2-3 timer	3-4 timer	4-5 timer	Mer enn 5 timer
Film, TV-serier, Youtube videoklipp/film, underholdningsprogrammer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spill (på mobil, nettbrett, spillkonsoll, PC)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Skolerelaterte oppgaver, inkludert lekser med bruk av skjermmedier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Gi et svar i hver linje - for en typisk helgedag (tid per dag lørdag/søndag)

	Ingen	1-15 minutter	15-30 minutter	30-60 minutter	1-2 timer	2-3 timer	3-4 timer	4-5 timer	Mer enn 5 timer
Videosamtale (f.eks. Facetime, Skype)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sosiale medier eller andre kommunikasjonsstyper (Snapchat, Instagram, Facebook, Messenger, Twitter, Whatsapp, E-mail, SMS)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annet (f.eks. Tegneprogrammer, lage musikk- eller stopmotion film)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hvis du har et annet svar, gi eksempel på hva:

3. De neste spørsmålene handler om dine foreldres skjermvaner:

	Aldri	Sjeldent	Noen ganger	Ofte	Alltid
Hvor ofte bruker foreldrene dine tid foran en skjerm utenom jobb? f.eks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

for å være på sosiale medier, spille spill eller se film

4. Hvor ofte ser/strømmer du TV-serier eller filmer sammen med dine foreldre/foresatte?

- Aldri
- Mindre enn en gang per uke
- En gang per uke
- 2-4 dager per uke
- 5-6 dager per uke
- Hver dag, en gang per dag
- Hver dag, mer enn en gang per dag

5. Hvor ofte spiser du måltidene som står skrevet nedenfor mens du ser/strømmer TV-serier eller filmer (f.eks. Youtube).

Marker ett svar per linje.

	Aldri	Mindre enn én gang per uke	Én gang per uke	2-3 ganger per uke	4-5 ganger per uke	6 ganger eller mer per uke
Frokost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lunsj	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Middag	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kveldsmat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mellommåltider	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

6. Regler for tidsbruk foran skjerm

	Helt uenig	Litt uenig	Verken enig eller uenig	Litt enig	Helt enig
Mine foreldre har regler for hvor mange timer per dag jeg får lov til å bruke skjerm for å være på sosiale medier, se på TV, eller spille videospill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mine foreldre har regler for når jeg får lov til å bruke skjerm til å være på sosiale medier, se på TV, eller spille videospill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Tenk på en vanlig hverdag. Hvor mye tid bruker du vanligvis på aktiviteter foran en skjerm (mobil, nettbrett, PC, TV)?

Sett gjerne flere kryss.

	Ingen	Mindre enn 30 minutter	30 minutter til 1 time	1 til 1,5 time	1,5 til 2 timer	Mer enn 2 timer
Morgen (kl.06-09)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formiddag (kl.09-12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tidlig ettermiddag (kl.12-16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sen ettermiddag (kl.16-19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kveld (kl.19-22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sen kveld og natt (etter kl.22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Tenk på en vanlig helg (lørdag/søndag). Hvor mye tid bruker du vanligvis på aktiviteter foran en skjerm (mobil, nettbrett, PC, TV)?

Sett gjerne flere kryss.

	Ingen	Mindre enn 30 minutter	30 minutter til 1 time	1 til 1,5 time	1,5 til 2 timer	Mer enn 2 timer
Morgen (kl.06-09)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Formiddag (kl.09-12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tidlig ettermiddag (kl.12-16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sen ettermiddag (kl.16-19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kveld (kl.19-22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sen kveld og natt (etter kl.22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SØVN

Nå kommer de siste spørsmålene i spørreskjemaet. De fleste spørsmålene handler om dine søvnvaner på skoledager og i helgen.

1. Når står du vanligvis opp på en skoledag?

Velg ...

2. Når legger du deg vanligvis på en skoledag?

Velg ...

3. Når står du vanligvis opp på en helgedag?

Velg ...

4. Når legger du deg vanligvis på en helgedag?

Velg ...

5. Hvor ofte spiser du vanligvis mat/snacks etter klokken 21.00 på kvelden?

- Aldri/sjeldnere enn 1 gang i uken
- 1 gang i uken
- 2 ganger i uken
- 3 ganger i uken
- 4 ganger i uken
- 5 ganger i uken
- 6 ganger i uken
- Hver dag

TAKK FOR AT DU SVARTE PÅ SPØRRESKJEMAET :)

