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Are there differences in health care utilization in areas with both Sami and non-Sami populations in Norway?

The SAMINOR 1 study

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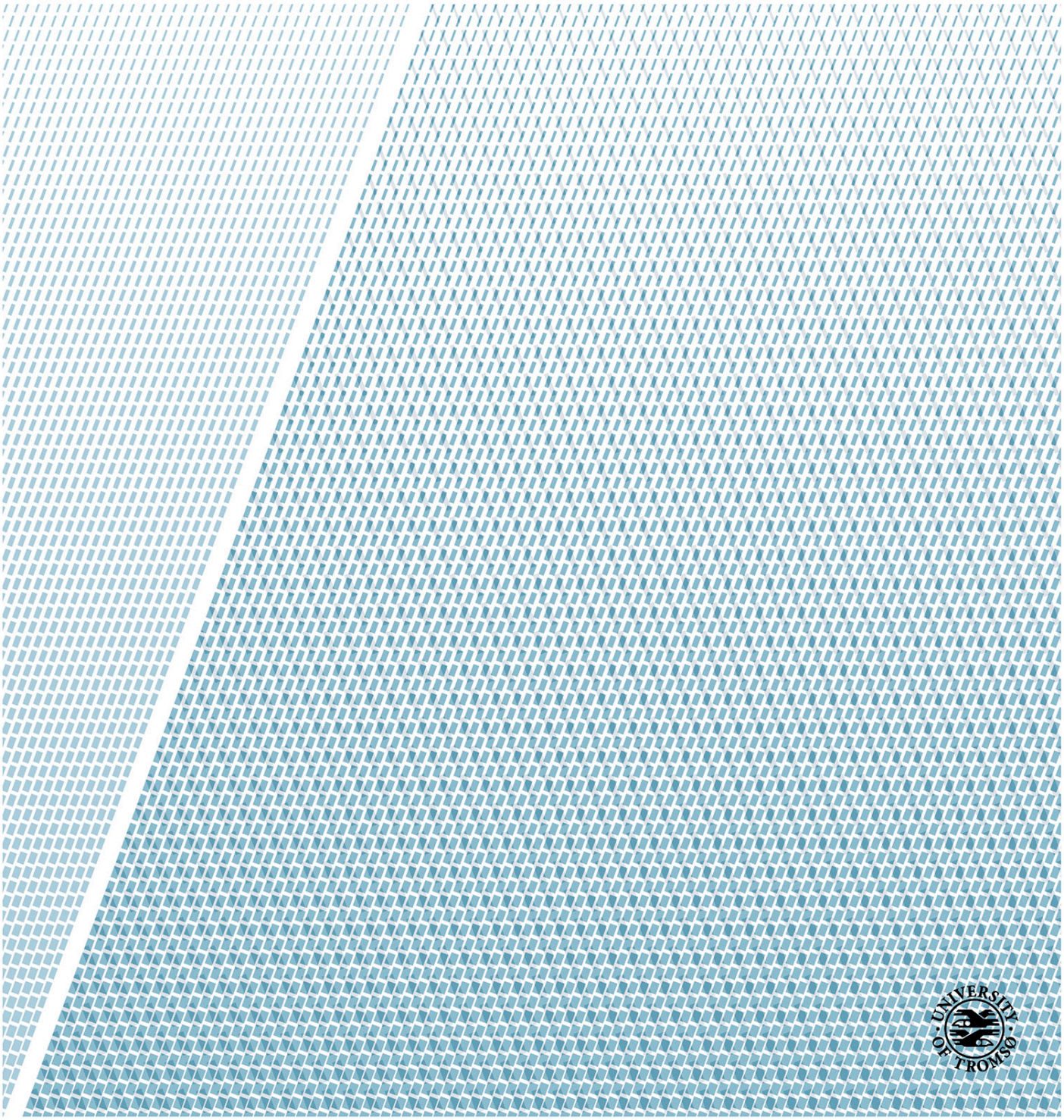

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Susan Hansen

Abstract

Background

Western countries (Australia, New Zealand, the United States and Canada) with an indigenous population can all report disparities in health status between the majority and the indigenous population. Corresponding differences have not been found among the indigenous population in Norway, the Sami. Nevertheless, concerns regarding under-utilization of health care services and health disparities have emerged from previous studies from the 1980s.

Objective

More recent studies have not been able to confirm findings of under-utilization, and the previous assumptions are currently being challenged. To determine whether there are ethnic differences in health care utilization in areas with both Sami and non-Sami populations in Norway, individually derived and population-based data is needed. Thus, this thesis seeks to investigate potential ethnic differences in the number of general practitioner (GP) visits during the past year.

Material and Methods

Data used in this thesis stems from the SAMINOR 1 study; a cross-sectional study from 2003-2004 in northern Norway. Participants in this study include persons of Sami, Kven and/or Norwegian ethnicity in the same geographical area.

Conclusion

The findings in this thesis confirm findings from other recent studies; overall, small differences in the number of GP visits during the past year were found when comparing Sami and non-Sami women and men in rural areas in Norway.

Keywords

SAMINOR 1, ethnic disparities, ethnicity, Sami, GP utilization.

Abbreviations (in alphabetical order)

ANOVA	Analysis of variance.
CI	Confidence interval.
ESP	European Standard Population.
GP	General practitioner.
HUNT	Nord-Trøndelag health survey.
LE	Life expectancy.
LTPA	Leisure-time physical activity.
MI	Myocardial infarction (heart attack).
Non-Sami	Responders reporting no Sami affiliation.
P-value	Probability value.
RRR	Relative-risk ratio.
Sami I	Responders reporting at least 3 generations use of Sami as domestic language.
Sami II	Responders reporting at least 1 Sami identity mark.
SAMINOR 1	The first population-based study on health and living conditions in areas with both Sami and Norwegian settlements.
SES	Socioeconomic status (combination of education, occupation and income).
SD	Standard deviation.
SRH	Self-rated health.
Tromsø study	Repeated epidemiological health survey carried out in the city of Tromsø, Norway, in the periode 1974–2015.
WWII	World War II.

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1. Introduction

As of today, western countries with indigenous populations such as Canada, the United States, Australia, and New Zealand can all document various degrees of differences in health status between the majority and the indigenous population [1, 2]. Since the 1960s, policy initiatives have been implemented in order to minimize assumed disparities in health status between the indigenous people of Norway, the Sami, and the majority [3].

The situation in Norway today is distinguished from the countries mentioned in the above. This is due to the fact that few differences in health status between the Sami and the non-Sami population have actually been identified. Previous studies have however reported an under-use of health care services within the Sami population [4], and also less satisfaction with the general practitioner (GP) service among Sami-speaking users [5]. The latter study [5] is based on the same data, as is used in this thesis. Recently however, results from register-based studies have found no difference in health care costs between municipalities belonging to the Administrative Area of the Sami language and other surrounding municipalities [6]; hospital expenditure rates are above the national average and equal to that of the municipalities in the same geographical area [6]. Individual derived and population-based data is however needed to determine whether there are ethnic differences in utilization of GP services in geographical areas with both Sami and non-Sami populations in Norway.

1.1. Aim of this thesis

Using population-based and individual derived data, the overall aim for this thesis is to explore if there are ethnic differences in the number of general practitioner (GP) visits during the past year.

2. Background

The Sami people, the GP service in Norway, and factors associated with GP utilization will be described in the following sections.

2.1. The indigenous people of Norway, the Sami

The Sami people are an indigenous people whose traditional settlement area – Sápmi – includes the northern parts of Norway, Sweden, Finland and the Russian Kola Peninsula [7]. In Norway, Sápmi, streches from Finnmark County (in the north) to Engerdal in Hedmark County (in the south) [7]. Today, most Sami work in the service industries [8] and a little over 3000 people are associated with reindeer husbandry [9]. As of today, no official and updated demographic data exists on the Sami population [10], as the last population census was carried out in 1970. The inadequate estimates of the total number of Sami inhabitants in Norway generally vary between 40,000 and 50,000 [11].

The Sami population has over the years undergone pressure to assimilate [12]. Between the years of 1850 to about 1960, various political initiatives were taken to assimilate the Sami population, e.g., banning the use of Sami language in schools [13,14]. Assimilation of the Sami population has, in varying degrees, led to loss of native culture and language.

The assimilations process, referred to as the Norwegianization process [14], also took place in combination with the general development and modernization after World War II (WWII). Large areas of the northern part of Norway was destroyed during a few months of WWII, leaving little to no trace of ethnic diversity in the physical

surroundings, and depriving the inhabitants of all personal belongings [14]. The rebuild and reconstruction of destroyed settlement areas was done after Norwegian cultural standards (using uniform standard houses), again leaving no room for ethnic diversity [14]. The overall goal in the post-war years was to provide equal access to social goods and improve the living conditions for the whole population regardless of ethnic affiliation [14], and the Sami culture's way of living was increasingly looked upon as inferior when compared to the Norwegians way of life. However, the development has had some positive effects also; the population of Northern Norway, Sami and non-Sami, have had increased opportunities for education, employment and modern medical care [14].

Since the 1960s, political initiatives have been taken (and since then implemented) in order to strengthen and resurrect the Sami language and culture; this included the passing of the Sami Act in 1987 and the subsequent establishment of the Sami Parliament in 1989 [15], thereby giving the Sami and Norwegian languages equal status and the Sami people the right and opportunity to receive services in the Sami language within the Administrative Area for the Sami Language [5,16].

This Area included the municipalities of Kautokeino, Karasjok, Tana, Nesseby, Porsanger, Kåfjord, Lavangen (included in 2009), Tysfjord (included in 2005), Snåsa (included in 2008), and Røyrvik (included in 2013). In terms of health care, specialist services in cardiology and psychiatry have been established and seats have been allocated for Sami students in medical schools [17,18].

Following WWII, the inhabitants of the northern part of Norway, both Sami and non-Sami, have undergone changes in living conditions and lifestyle [14,19]. Populations undergoing rapid social, cultural and economic change are often characterized by a

pattern of emerging chronic diseases and injuries [1]. This development is often referred to as the "epidemiological transition" [20]. The key features of this transition among indigenous populations are a rapid decline in infectious diseases, such as tuberculosis, and a corresponding increase in chronic diseases, such as heart disease. The increase in chronic diseases is among other things because of an aging population, increased use of imported junk food and a decrease in level of physical activity and an increase in prevalence of obesity [20]. For example, after WWII, the mortality from myocardial infarction (MI) increased rapidly in Norway throughout the 1950s and 1960s; many men died before the age of 65 and the mortality was especially high in Finnmark (the county with the highest concentration of Sami inhabitants). From the 1970s and onwards, the mortality rates were dropping and by the year of 2000, the rates were reduced by about 50% compared with the rates from the 1970s. The risk has continued to drop in the period 2000–2010 [21]. While the mortality from MI has dropped, the prevalence of obesity has increased rapidly in Norway between 1985 and 2008 [22]. In the same period, the prevalence of type II diabetes has also increased; increased bodyweight is associated with increased risk of type II diabetes [23]. And ill health is associated with health care utilization (see Chapter 2.2.2).

2.2. Health and health care

Inequalities in health care status are currently on the Norwegian political agenda [24], because it has been linked with access and use of available health care services [1,25]. The goal is for everybody to have equal access and equal quality of care [24]. Little research has however been done on the utilization of health care services in Norway [26].

Infant mortality rates (IMR), which is deaths per 1,000 live births before the age of 1, is a common and validated measure for health care utilization and services approachable for a given population [1,27]. The ethnic gap in IMR in other western countries with an indigenous population (such as Australia, New Zealand, Canada and USA) is according to Gaski as much as 5 deaths per 1000 live births [28]. A previous concern has been, that the alleged under-utilization of health care services has led to inferior health status among the Sami population, when compared with the health status of the Norwegian population [4,6]. This assumption is in line with what is assumed in other western countries with an indigenous population. Furthermore, in the 1960s the IMR in Finnmark (the county with the highest concentration of Sami inhabitants) was 24,6/1000 and thereby equal to some of the poorest countries in Europe [28]. The corresponding number for the rest of Norway at the time was 17,1/1000. The IMR in Finnmark has decreased in line with the IMR for the rest of the country [27], and the level for Norway as a whole was 3,05/1000 in 2004 [29]. These numbers are well below the EU average [28], and among the lowest in the world [29]. The decrease in IMR may indicate progress and development in medical health services available and accessible for and utilized by the Sami population, but could also merely be an expression of regional differences.

The government's Action Plan for Health and Social Services to the Sami Population in Norway, 2002-2005 states, that health and social services should be at the same level for the whole Norwegian population [5].

2.2.1. Access to the GP

Norway has universal health care insurance; the GP services are to a large extent publicly funded through taxes, meaning that economy or health insurance should not be of importance [30]. Primary health care is the first contact with the health care system and is delivered by a GP in the local communities via a list system: everybody is assigned to a specific, named GP following the coordination reform in 2001.
The GP offices are run by and located in the municipalities, serving a specific and limited geographical area within accessible distances and by ground transportation. It should be mentioned, that the geographical distance and travel time varies from no travel time to more than 5 hours and from no geographical distance to almost 400 kilometres. The county of Finnmark is mostly rural, sparsely populated and has the longest distances in Norway [31]. The harsh winter weather can also isolate areas for hours (perhaps even days), and public busses do not operate on a daily basis [32],

The GP also serves as a gatekeeper to the secondary health care services, meaning that you need a referral from your GP in order to see most out-patient medical specialist and hospitals. Hospitals and out-patient care is operated on the governmental level [30]. Health care expenditure in Norway is among the highest in the world [33]. The above applies to everybody in Norway.

However, utilization of GP services is a complex interaction of different factors. Julian Tudor Hart has sought to describe this dilemma by the Inverse Care Law [32→34]: *"that the availability of good medical care tends to vary inversely with the need of the population served*" (p. 412); meaning that those who need and will benefit most from health care, are not always the most likely to receive it and vice versa,

thereby further increasing inequalities in health status [34]. In line with the above, Van Doorslaer et al. [35] draws attention to, that GP services tend to service those who are poor off, while specialist out-patient services tend to service those who are better off (thereby making the overall utilization of specialized doctors somewhat more for the better off) [35].

2.2.2. GP utilization

It is well-known that demographic factors such as age, gender, marital status are socially structured factors such as ethnicity can affect utility rates [36-38] (see figure 1). Records from Statistics Norway show that the average number of GP visits generally increases with age for both men and women, and that the utilization rate is highest among the middle-aged and elderly [37,39]. Women visit their GP more often than their male counterparts [37,39,40]. Marital status, being married or being in a relationship, could act as a means to an increase in the number of GP visits due to preventive and pregnancy related care [37-39], this is also found abroad [38 40]. Studies have found, that indigenous peoples are often worse off in terms of socioeconomic status (SES), risk profile, access to health care, self-rated health (SRH) and are also more dissatisfied with the care received [1,41- 46], suggesting that ethnicity is a factor in GP utilization. Studies have indicated an association between SRH and mortality, and thereby GP utilization, even after controlling for other predictors [33,35,47,48]. In reference to this, a recent doctoral thesis by Hansen found SRH to be the dominant predictor of utilization of GP services among responders in the Tromsø study (Tromsø 6) [33]. Studies suggest, that indigenous peoples have traditionally rated their own status as inferior and/or differently compared with the majority population [43,46,49].

Studies from abroad indicate, that language barriers repel patients from seeking health care [50-51]. Patient expectations, and to what extent those expectations are fulfilled, is related to different factors such as patient and physician characteristics and interaction [54-55]. Norwegian studies have suggested that the Sami speaking population might be less satisfied with the GP services compared with the Norwegian majority [5,6]. Patient-centred communication, and the consequent feeling of being on "common ground" have been related to improvement of clinical treatment and also of the patient's SRH [56]. Bongo suggests that some Sami patients are dissatisfied with the Norwegian health care system, because it does not take the Sami perspective into account [49]. Cass et al. concludes that lack of language skills are only part of the problem, and that knowledge of social and cultural dimensions is necessary to obtain a shared understanding of health and disease [57].

Some lifestyle related factors and education attainment are related [58]. Smoking of tobacco is thought to increase GP utilization [59], and is more common among people with fewer years of education [58,60], thereby making (length of) education an indirect factor for GP utilization due to health related consciousness, knowledge and health seeking behaviour [60]. However, recent quitters also utilize more health care [61]. This could be due to events in health status that encourages smoking cessation [62]. Level of LTPA is also associated with level of education, and thus a factor in health care utilization [63,64]. Numerous diseases and chronic conditions benefit from LTPA [65]. Recent Studies found that LTPA significantly reduces utilization of GP services among the older part of the population [66,67].

Studies have found that the more services that are available and the shorter geographical distances are, the more services will be utilized [68].

The figure below (figure 1) illustrates some of the factors that can affect GP utilization.

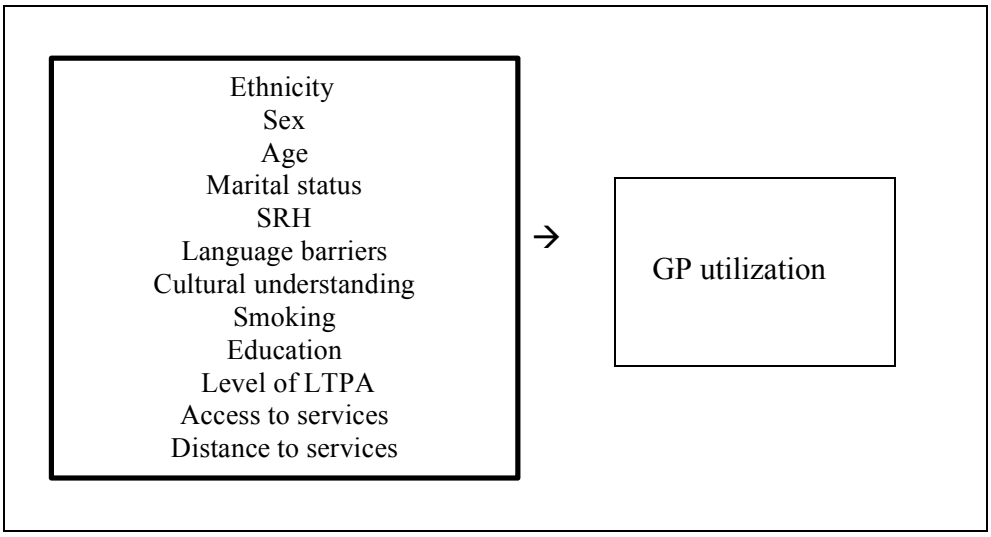

Figure 1. Factors that can affect GP utilization.

3. Material and methods

In the following I will present the data sources and the sample used in this thesis. This master project was planned before data from the SAMINOR 2 questionnaire study (executed in 2012) [69] was available.

3.1. Data sources and study population

The data used in this thesis is from the first population-based study on health and living conditions in areas with both Sami and Norwegian settlements (SAMINOR 1). This study is a cross-sectional survey and was conducted in 2003–2004, and was originally designed as a cardiovascular screening study [8]. Responsibility for SAMINOR 1 is held by the Centre for Sami Health Research, Department of Community Medicine at UiT The Arctic University of Norway in Tromsø. The administration and practical procedures of this study were carried out in collaboration with the National Health Screening Service, which is now incorporated in to the Norwegian Institute of Public Health [8]. The overall aim of the survey was to study possible differences in health and living conditions in geographical areas with both Sami and non-Sami populations. The participants were persons of Sami, Kven and/or Norwegian ethnicity in the same geographical area [8].

Information from the 1970 census was used as a starting-off point to find areas with an expected high proportion of Sami inhabitants; included in SAMINOR 1 were municipalities with at least a Sami population density of 5-10% as of the 1970 census. The census had asked additional questions regarding language and ethnicity for the inhabitants of Northern Norway and therefore represented the best source of information on ethnicity. Additionally, updated ethnographic data and local

knowledge was used to include additional municipalities. In some municipalities, only certain districts were included. Five counties were included in SAMINOR 1: Finnmark, Troms, Nordland, Nord-Trøndelag and Sør-Trøndelag (see figure 2) [8]. Except for the city of Alta, the municipalities and settlements invited had 3000 or fewer inhabitants.

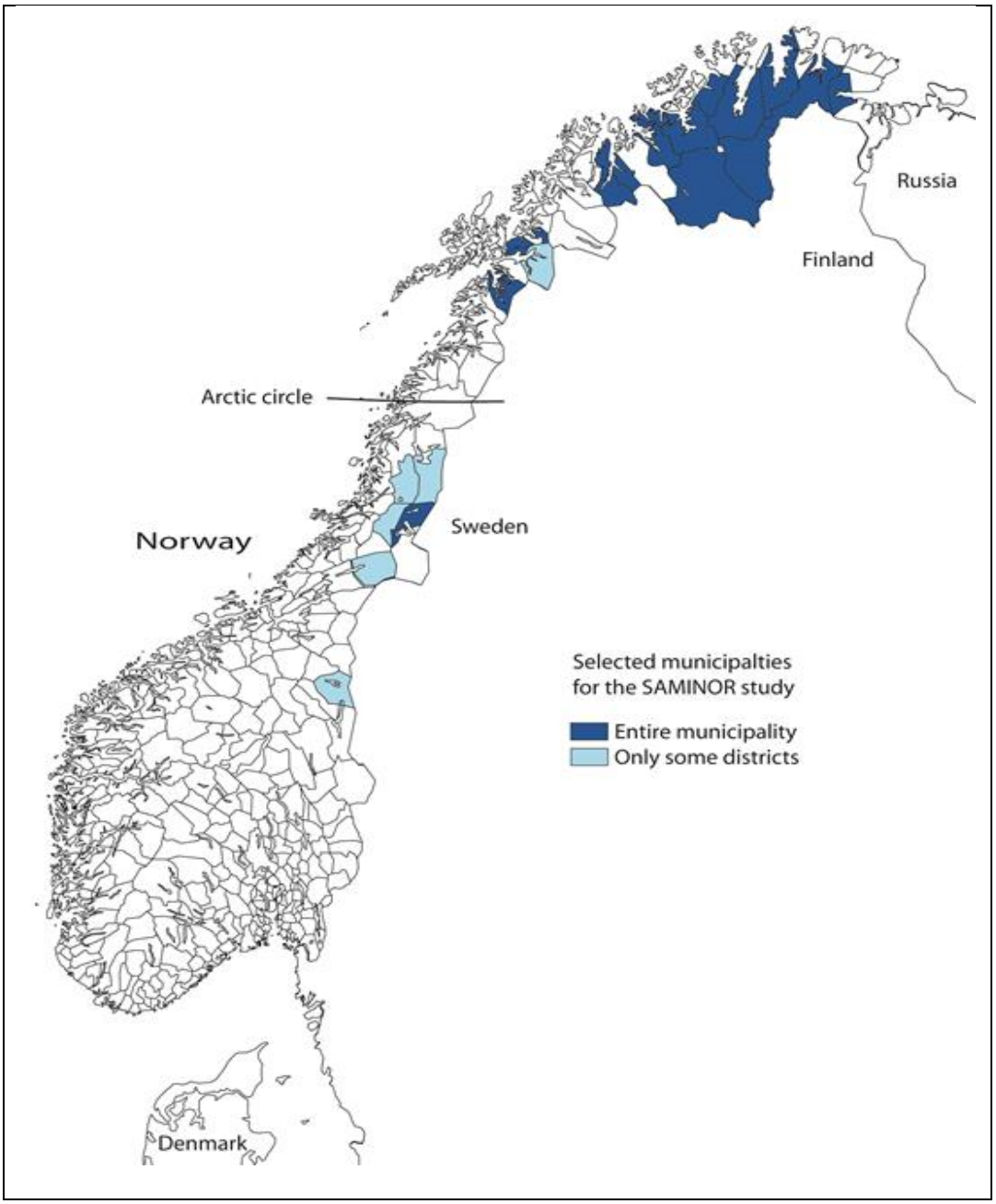

Figure 2. Map of Norway and municipalities visited in the SAMINOR 1. Designed by Marita Melhus, Centre for Sami Health Research.

In 2003, eligible participants were born during 1925–1967 and 1973, and in 2004, during 1925–1968 and 1974. The age range in 2003 was 30 and 36 to 78 and in 2004, 30 and 36 to 79. Total numbers of invited persons were 27,987 [8]. Name, address and unique identification number was taken from the Central Population Registry of Norway [8].

The responders of 30 years of age were later excluded from the analyses due to a low response rate [8]. The overall response rate was 60,9%, meaning that 16,538 men and women aged 36-79 participated and gave consent to medical research. Furthermore, in this thesis, responders who did not answer the initial questionnaire (containing questions regarding use of GP services and ethnicity), the main questionnaire, responders who did not give information on ethnicity, the number of GP visits during the past year and responders reporting “foreign” affiliation were also excluded. Foreigners were responders who were born abroad and answered “other” to the questions concerning language and ethnic background (see figure 4). A total of 14,535 responders were included in this thesis (see figure 3). Among these, 30.6% (n=4447) were from the municipality of Alta, of which 80.7% (n=3588) belonged to the non-Sami group, and 2.4% (n=105) belonged to the Sami I group (see Chapters 3.3 and 5.4).

The flowchart below illustrates how the study population for this thesis is selected.

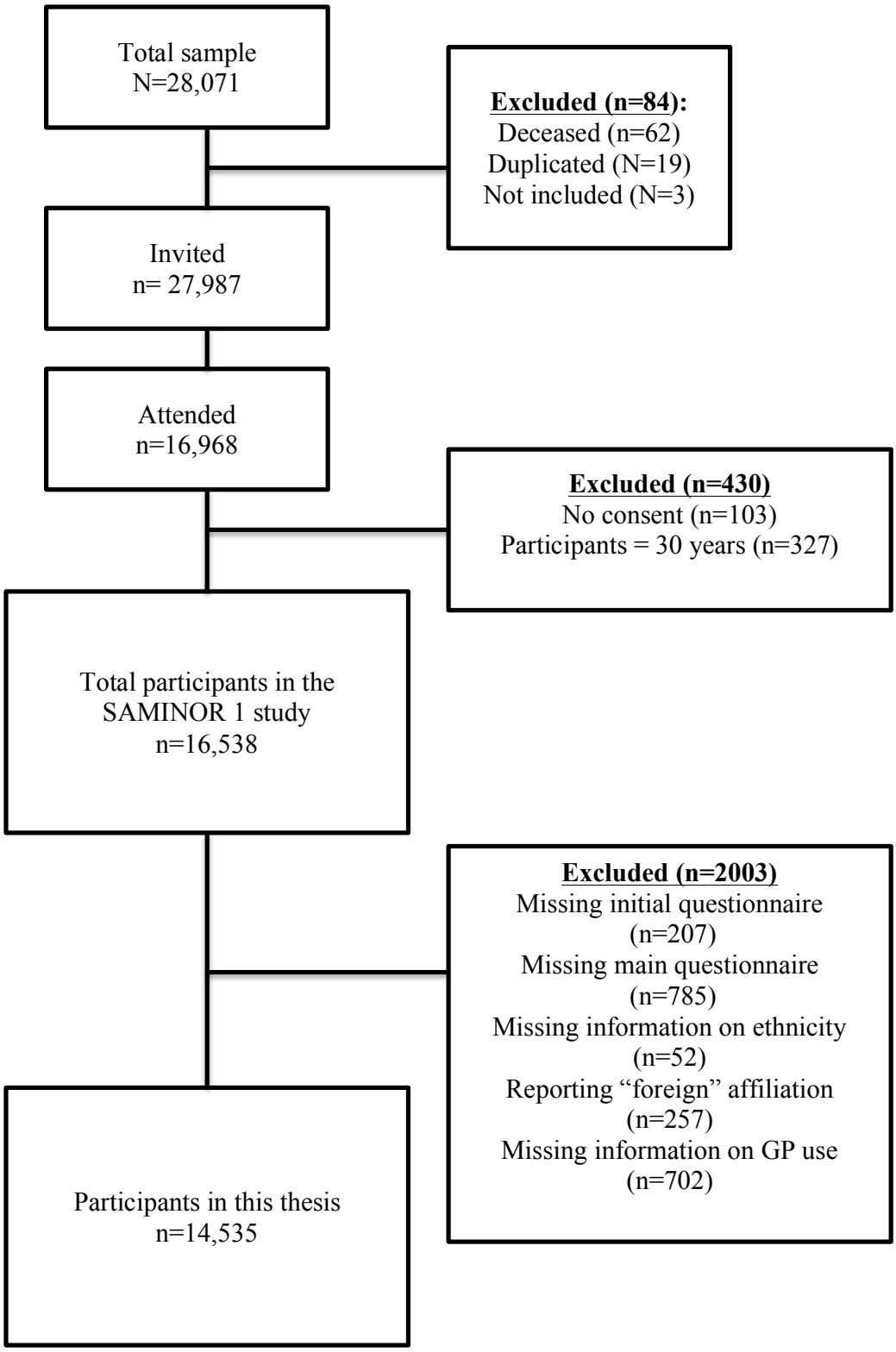

Figure 3. Selection of the study data used in this thesis.

3.2. Questionnaires

The SAMINOR 1 study consisted of three questionnaires and a clinical examination. The Centre for Sami Health Research designed the two-page initial questionnaire (Q1) and also the additional four-page questionnaire (Q3) (see appendix A for a combination of Q1and Q 2). The Norwegian Institute of Public Health held responsibility for the three-page screening/main questionnaire (Q2) and also the clinical examination. The examinations were performed by trained personnel in buses, travelling through the participating areas [8,70].

The survey was originally launched in Finnmark in Nesseby, Tana, Karasjok and Kautokeino. Inhabitants in the area received a letter containing an invitation (see appendix B) and also containing the Q1: meaning that the participants could return Q1 without further participation and reminder. Those who agreed to attend the screening returned the questionnaire and later received an invitation to the clinical examination and the Q2. Participants were asked to complete the Q3 after the clinical examination. The design resulted in a low response rate. It was therefore decided to run a follow-up, with return of the buses after 2-3 months, where people were invited regardless of having returned Q1 [8,70].

The design was changed for the remaining municipalities: Q1 and Q2 was hereafter combined and everybody received an invitation with the time and date for the clinical examination whether they had completed the Q1 or not [8,70].

In the counties of Finnmark and Troms, those who did not attend the first screening received a reminder with a date for the return of the busses. In Nordland and

Trøndelag, the busses did not return. Participants in Tana, Nesseby, Karasjok and Kautokeino, who attended the physical examinations but did not complete the Q1, received a questionnaire regarding language and ethnicity in the beginning of 2006. Out of the 322 possible responders, only 106 returned completed questionnaires [8,70].

3.2.1. Content of the questionnaires

The initial questionnaire (Q1) (used in this thesis, see appendix A), contained questions regarding, 1) use of health and care services, 2) injuries and accidents, 3) language and ethnicity, 4) SES, 5) bullying and discrimination, 6) smoking habits and the use of tobacco, 7) physical activities and 8), education and work life. The screening questionnaire (Q2), contained questions regarding, 8) current and/or previous disease, 9) mental health, 10) family history of disease, 11) use of medication, and 12) diet and alcohol consumption. The additional questionnaire (Q3), contained questions on, 13) various symptoms, 14) additional questions concerning diet, 15) upbringing, family constellation and religion, 16) values and, 17) value questions specifically for these with Sami background [8,70].

All of the questionnaires were available in both the Norwegian and Sami languages, translated by professional translators. The use of Sami language in the questionnaires was low: meaning that only 1.6% responded in Sami in the initial questionnaire and 1.3% in the additional questionnaire. The use of the Sami questionnaire was, as expected, highest in areas with the highest concentration of Sami residents [8,70].

3.3. Ethnicity

The following figure illustrates how ethnicity was found and determined. Multiple answers were allowed on all questions.

In Northern Norway there live people of different ethnic backgrounds. That is, they speak different languages and have different cultures. Examples of ethnic background, or ethnic groups are Norwegian, Sami and Kven.

What language do/did you, your parents and your grandparents use at home?

	Norwegian	Sami	Kven	Other
Mother's father	☐	☐	☐	☐
Mother's mother	☐	☐	☐	☐
Father's father	☐	☐	☐	☐
Father's mother	☐	☐	☐	☐
Father	☐	☐	☐	☐
Mother	☐	☐	☐	☐
Myself	☐	☐	☐	☐

What is your, your father's and your mother's ethnic background?

	Norwegian	Sami	Kven	Other
My ethnic background is	☐	☐	☐	☐
Father's ethnic background is	☐	☐	☐	☐
Mother's ethnic background is	☐	☐	☐	☐

	Norwegian	Sami	Kven	Other
I consider myself	☐	☐	☐	☐

Figure 4. How ethnicity was found and determined. Adopted from Lund et. al [8] .

Sami responders were dichotomized into Sami I and Sami II. The former included responders reporting use of Sami language at home by all grandparents, parents and the responder, whereas the latter included participants reporting at least 1 Sami identity mark (answered Sami on at least one of the eleven questions).

Responders with no Sami affiliation (Kven and Norwegian, or "other") were grouped in the non-Sami category: as a result of this, about 33% of the population in the study was represented by responders reporting Sami affiliation and about 59% of the responders reported Norwegian affiliation (table III). Geographical residence (inland/coastal) was not taken into account. Kvens are descendants of Finnish settlers who immigrated to northern Norway in the 1700s and 1800s [71].

3.4. Number of GP visits

The following figure shows how numbers of GP visits (in bold, my revision for clarification purposes only) were found and determined (all response options are included for clarification purposes only.)

Use of health services

How many times *during the past year* have you personally used?
(Tick one box for each line)

	None	1-3 times	4+
GP (general practitioner)	☐	☐	☐
Medical specialist	☐	☐	☐
Emergency GP	☐	☐	☐
Admission to a hospital	☐	☐	☐
Home nursing care	☐	☐	☐
Home aid, organized by the municipality	☐	☐	☐
Physiotherapist	☐	☐	☐
Chiropractor	☐	☐	☐
Dentist	☐	☐	☐
Alternative medical practitioner	☐	☐	☐

Figure 5. How numbers of GP visits were found and determined.

3.5. Covariates

The data used in this thesis is derived from the available data from the SAMINOR 1 study; meaning that it is not possible to analyze all the factors that can affect GP utilization. The variables included in this thesis are found to be most comprehensive for the factors mentioned in chapter 2.2.2 and are well-established determinants of GP and health care utilization [72-74]. Variables used in this thesis are: age, education

attainment, self-reported health, smoking habits, LTPA, and satisfaction with the GP's language skills (see figure 6). In this thesis, the latter variable is not used as a measurer of the "GP's language skills" per se, but used a proxy for the responders experience of the communicative interaction between GP and responder. The variable does not in itself give any information on as to why the responder is satisfied or dissatisfied, and it is difficult to assess what the response actually refers to in his/her answer (does the responder wish to be addressed in a different language, does the GP use a technical jargon, health literacy etc.).

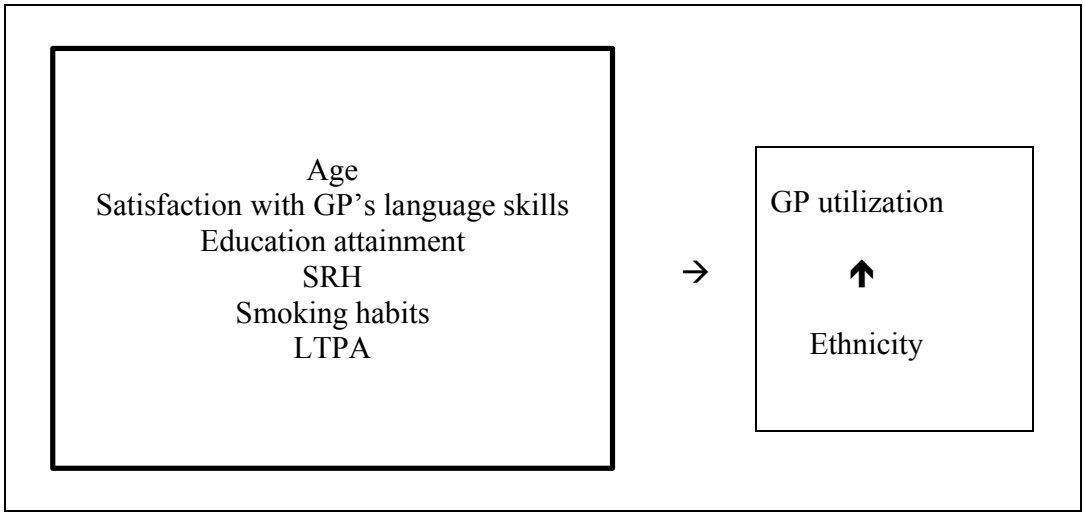

Figure 6. Covariates that can affect GP utilization included in this thesis.

Level of satisfaction with the GP's language skills (Sami or Norwegian) was determined by asking: *How satisfied/dissatisfied are you with the following aspects with the municipal health service in your municipality?* with the sub-question: *Your doctor's language skills (Sami or Norwegian)?* Response options were "Very satisfied", "Satisfied", "Dissatisfied" and "Do not know". Only one answer could be marked. Those ticking "Do not know" were considered missing in the analysis.

Education attainment was determined by asking: *How many years of schooling/education have you completed (count all years you have attended school or been studying)*; the responder was asked to report number of years.

Self-rated health was determined by the question: *What is your current state of health?* Response options were: "Poor", "Not so good", "Good" and "Very good". Only one answer could be marked. I dichotomised this variable into "Poor" (the first two options) and "Good" (the last two options).

Smoking habits were found by asking; *Are you currently, or were you previously a daily smoker?* Response options were: "Yes, currently", "Yes, previously" and "Never".

Level of LTPA was determined by the questions; *Describe your exercise and physical exertion in leisure time. If your activity varies much, for example between summer and winter, then give an average. The question refers only to the last twelve months*. Response options were: "Reading, watching TV, or other sedentary activity", "Walking, cycling, or other forms of exercise at least 4 hours a week (this should include walking or cycling to work, Sunday stroll/walk, etc.)", "Participation in recreational sports, heavy gardening, etc. (note: duration of activity at least 4 hours a week)" and "Participation in hard training or sports competitions regularly and several times a week". Only one answer could be marked. The last two categories were merged due to few observations in the latter.

3.6. Statistical analyses

In this study, we included variables that in the literature are well-established determinants of GP use.

In Tables I and II, the Pearson's chi square test was used to test differences between the ethnic groups with regard to the categorical variables. An ANOVA was run to test the difference in average age.

The age-standardized prevalence rates in Table IV and V were computed by using the direct method and the European Standard population (ESP) from 1976 [75].

A multinomial logistic regression (Tables VI and VII) was ran in order to assess the impact of selected covariates on the relationship between ethnicity and the number of GP visits during the past year. This method was chosen as initial testing indicated that one could not assume proportional odds; thus an ordinal logistic regression was considered inappropriate. Dichotomizing the dependent variables was also considered for the purpose of running a standard logistic regression. However, given that information is lost when dichotomizing variables, we decided to go for a multinomial regression instead.

Included in the regression models were variables known to affect GP use. The models were built by performing forward regression by step-wise adding of variables and assessing their impact on the result. Significant ($p<0.05$) variables changing the point estimates for Sami I and/or Sami II by +/- 10% were included in the final model. The model building was performed manually and thus not automatically ran by STATA.

The regression was performed with 3 different models (1, 2 and 3). Model 1 included age, model 2 included age and satisfaction with GP's language skills, and model 3 controlled for age, satisfaction with the GP's language skills, education attainment, SRH, smoking habits and LTPA.

Sensitivity analyses with regard to "marital status," "your satisfaction with the distance to the GP office," "the GP's understanding of your culture background," and "overall satisfaction with the GP service" were run by included these items in the final model (data not shown). Relevant interaction terms were also included in the sensitivity analysis to assess possible effect modification.

Data management and statistical analyses were performed using STATA version 13.0 (StataCorp, College Station, TX). The significance level was chosen at $p<0.05$. STATA lacks an official command specifically designed to compare overall fit for regressions with different number of observations. When fitting two regression models with the same outcome variable but different set of predictors, missing values can produce different estimation samples for each regression. We therefore generated a variable that identified the common sample for the two models that represented the basis for Akaike information criterion (AIC) and Bayesian information criterion (BIC) estimations; these estimations were then used to evaluate the overall fit of the respective models.

3.7. Ethical considerations

Approval for the SAMINOR 1 study was given by the Regional Committee for Medical and Health Research Ethics in Northern Norway. Permission was given by The National Data Inspectorate to store the data material. All the participants gave signed informed consent forms (see appendix C). All participants were asked if the provided information and/or blood samples could be used in further research.

4.0. Results

4.1. Characteristics

Tables I and II display the characteristics of the male and female study groups, respectively.

Table I. Characteristics of the male study group. Values are means or percentages, n= 7050[a] (The SAMINOR 1 study 2003–2004).

Variable	Sami I	Sami II	Non-Sami	p[b]
Age in years (SD)	56.1 (10.9)	54.0 (10.7)	54.7 (11.0)	<0.001
Satisfaction with GP's language abilities				<0.001
Very satisfied	165 (25.2)	589 (44.5)	2131 (55.2)	
Satisfied	347 (53.1)	670 (50.6)	1658 (43.0)	
Dissatisfied	142 (21.7)	65 (4.9)	71 (1.8)	
Education attainment				<0.001
0-12 years	593 (77.6)	1090 (70.5)	3049 (68.6)	
13 or more years	171 (22.4)	457 (29.5)	1399 (31.5)	
Self-rated health				<0.001
Poor	281 (35.3)	527 (32.8)	1288 (28.1)	
Good	515 (64.7)	1080 (67.2)	3295 (71.9)	
Smoking habits				0.04
Never	185 (23.3)	433 (26.8)	1311 (28.5)	
Previous	347 (43.7)	681 (42.2)	1907 (41.5)	
Current	262 (33.0)	499 (30.9)	1382 (30.0)	
Leisure-time physical activity				0.79
Sedentary	184 (25.1)	360 (24.0)	1003 (23.1)	
Active	394 (53.7)	822 (54.8)	2406 (55.4)	
Hard training	156 (21.3)	317 (21.2)	937 (21.6)	

[a]Some estimates are based on lower sample sizes due to missing values.
[b] Pearson's χ^2 test or Analyses of variance (ANOVA).

For males, statistically significant ($p< 0.05$) differences between the ethnic groups were found in all the displayed variables except for leisure-time physical activity ($p = 0 .79$). Large differences in satisfaction with the GP's language abilities were observed among males; about 22% of the males in the Sami I group were dissatisfied compared with 4.9% and 1.8% in the Sami II and the non-Sami groups, respectively.

Overall, the Sami I and Sami II groups reported somewhat unfavorable levels in the selected variables relative to the non-Sami group. These differences were, however, small.

Table II. Characteristics of the female study group. Values are means or percentages, n= 7485[a] (The SAMINOR 1 study 2003–2004).

Variable	Sami I	Sami II	Non-Sami	p[b]
Age in years (SD)	55.0 (11.3)	53.0 (10.8)	54.1 (11.2)	<0.001
Satisfaction with GP's language abilities				<0.001
Very satisfied	147 (22.0)	627 (49.5)	2262 (56.5)	
Satisfied	312 (46.7)	568 (44.8)	1681 (42.0)	
Dissatisfied	209 (31.3)	72 (5.7)	62 (1.6)	
Education attainment				0.82
0-12 years	499 (66.1)	978 (64.8)	3101 (65.2)	
13 or more years	256 (33.9)	532 (35.2)	1656 (34.8)	
Self-rated health				0.02
Poor	305 (37.7)	555 (34.9)	1643 (32.9)	
Good	504 (62.3)	1036 (65.1)	3349 (67.1)	
Smoking habits				<0.001
Never	341 (42.1)	520 (32.4)	1870 (37.4)	
Previous	236 (29.1)	519 (32.3)	1573 (31.4)	
Current	234 (28.9)	566 (35.3)	1560 (31.2)	
Leisure-time physical activity				<0.001
Sedentary	233 (31.8)	355 (24.1)	1009 (22.0)	
Active	412 (56.2)	957 (64.9)	3041 (66.4)	
Hard training	88 (12.0)	162 (11.0)	529 (11.6)	

[a]Some estimates are based on lower sample sizes due to missing values.
[b] Pearson's χ^2 test or Analyses of variance (ANOVA).

For females, significant ($p< 0.05$) differences between the ethnic groups were found in all the displayed variables except for years of education. However, the differences were small except for the reported levels of satisfaction with the GP's language skills; among the females in the Sami I group, 31.3% were dissatisfied compared with 1.6% in the non-Sami group and 5.7% in the Sami II group. Except for smoking, the Sami I group reported somewhat unfavorable levels in the selected items relative to the non-

Sami group. The Sami II group reported unfavorable levels in all items relative to the non-Sami group. The table below (table III) shows the characteristics of the invited cohort in the SAMINOR 1 study.

Table III. Characteristics of the invited cohort, the participants, and the sample used in this thesis (The SAMINOR 1 study 2003–2004).

	Invited (%)	Participants (%)[a]	Ethnicity (%)	Thesis (%)[b]
Participants (n)	27,151	16,538	16,267	14,535
Attendance (%)	100	60.9	59.9	53.5
Sex				
Women	13037 (48)	8553 (52)	8413 (52)	7485 (51)
Men	14114 (52)	7985 (48)	7854 (48)	7050 (49)
Age				
36-49	10748 (40)	6040 (37)	5955 (37)	5377 (37)
50-64	10534 (39)	6966 (42)	6852 (42)	6177 (42)
65-79	5869 (22)	3532 (21)	3460 (21)	2981 (21)
County				
Trøndelag	1501 (6)	984 (6)	973 (6)	931 (6)
Nordland	2605 (10)	1205 (7)	1203 (7)	1151 (8)
Troms	6556 (24)	3938 (24)	3921 (24)	3667 (25)
Finnmark	16489 (61)	10411 (63)	10170 (63)	8786 (61)
Marital status				
Single	6472 (24)	3202 (19)	3137 (19)	2717 (19)
Married	15175 (56)	10259 (62)	10099 (62)	9163 (63)
Widow(er)	1826 (7)	1066 (6)	1040 (6)	871 (6)
Divorced	3054 (11)	1704 (10)	1688 (10)	1519 (10)
Separated	623 (2)	307 (2)	303 (2)	265 (2)
Ethnicity				
Sami I			2154 (13)	1620 (11)
Sami II			3642 (23)	3242 (22)
Kven			1176 (7)	1105 (8)
Norwegian			9023 (55)	8568 (59)
Foreigner			272 (2)	Excluded
Education[c]				
0-7 years			2472 (17)	2257 (16)
8-12 years			7370 (51)	7053 (51)
13+ years			4706 (32)	4471 (33)

[a]Total participants in the SAMINOR 1 study who consented to medical research and completed at least one questionnaire or attended the clinical investigation.
[b]Participants in this thesis
[c] Lower n due to missing.

4.2. Prevalence of GP visits

Tables IV and V display the age-specific, and total crude and age-standardised prevalence rates of the number of GP visits during the past year among males and females, respectively. There was practically no observed difference between the crude and standardized prevalence rates. Small to none ethnic variation in GP use was observed in both men and women.

Table IV: Age-specific, and total crude and age-standardized prevalence rates of number of GP visits during the past year in males by ethnicity (The SAMINOR 1 study 2003–2004, n=7050).

		No visits		**1–3 visits**		**4+ visits**	
	Sample	n	%	n	%	n	%
Sami I							
36–49	244	82	33.6	113	46.3	49	20.1
50–59	269	64	23.8	139	51.7	66	24.5
60–69	173	41	23.7	92	53.2	40	23.1
70–79	115	22	19.1	61	53.0	32	27.8
Total crude	801	209	26.1	405	50.6	187	23.4
Total age-adjusted[a]	801	221	27.6	398	49.7	182	22.7
(95% CI)		(24.3–30.8)		(46.2–53.4)		(19.7–25.7)	
Sami II							
36–49	603	168	27.9	309	51.2	126	20.9
50–59	535	133	24.9	256	47.9	146	27.3
60–69	335	68	20.3	191	57.0	76	22.7
70–79	154	16	10.4	97	63.0	41	26.6
Total crude	1627	385	23.7	853	52.4	389	23.9
Total age-adjusted[a]	1627	388	23.8	856	52.6	383	23.6
(95% CI)		(21.7–25.9)		(50.2–55.1)		(21.5–25.6)	
Non-Sami							
36–49	1627	474	29.1	877	53.9	276	17.0
50–59	1449	351	24.2	740	51.1	358	24.7
60–69	1013	192	19.0	585	57.8	236	23.3
70–79	533	63	11.8	334	62.7	136	25.5
Total crude	4622	1080	23.4	2536	54.9	1006	21.8
Total age-adjusted[a]	4622	1114	24.1	2531	54.8	977	21.1
(95% CI)		(22.8–25.4)		(53.3–56.2)		(20.0–22.3)	

[a] Direct standardisation using the European standard population as reference [75].

Small differences and only overlapping confidence intervals were observed in men. More Sami I men, however, reported (27.6%) having not visited their GP the past year compared with Sami II (23.8%) and non-Sami (24.1%). This seem to be due to relatively fewer 1–3 visits in Sami I men as there are practically no ethnic differences with regard to 4+ visits.

Table V: Age-specific, and total crude and age-standardized prevalence rates of number of GP visits during the past year in females by ethnicity (The SAMINOR 1 study 2003–2004, n=7485).

		No visits		**1–3 visits**		**4+ visits**	
	Sample	n	%	n	%	n	%
Sami I							
36–49	307	45	14.7	156	50.8	106	34.5
50–59	239	39	16.3	124	51.9	76	31.8
60–69	162	31	19.1	67	41.4	64	39.5
70–79	111	11	9.9	54	48.7	46	41.4
Total crude	819	126	15.4	401	49.0	292	35.7
Total age-adjusted[a]	819	127	15.5	402	49.1	290	35.4
(95% CI)			(13.0–18.0)		(45.7–52.6)		(32.1–38.7)
Sami II							
36–49	676	82	12.1	372	55.0	222	32.8
50–59	506	51	10.1	282	55.7	173	34.2
60–69	284	38	13.4	152	53.5	94	33.1
70–79	149	17	11.4	73	49.0	59	39.6
Total crude	1615	188	11.6	879	54.4	548	33.9
Total age-adjusted[a]	1615	190	11.7	877	54.3	548	33.9
(95% CI)			(10.2–13.3)		(51.9–56.8)		(31.6–36.3)
Non-Sami							
36–49	1920	301	15.7	1073	55.9	546	28.4
50–59	1507	188	12.5	830	55.1	489	32.5
60–69	1044	139	13.3	590	56.5	315	30.2
70–79	580	65	11.2	339	58.5	176	30.3
Total crude	5051	693	13.7	2832	56.1	1526	30.2
Total age-adjusted[a]	5051	702	13.9	2831	56.0	1518	30.1
(95% CI)			(12.9–14.9)		(54.7–57.4)		(28.8–31.3)

[a] Direct standardisation using the European standard population as reference [75].

In women, small ethnic differences were observed. More Sami I women (15.5%) did not visit their GP the past year compared with Sami II (11.7%) and non-Sami (13.9%) women. However, Sami I women (35.4%) tended to visit their GP 4+ times more often than did non-Sami women (30.1%).

With regard to missingness, the proportion of total item non-response with regard to the dependent variable was 4.6% (n=702); missingness ($p<0.01$) was more common in Sami I men (5.5%) and Sami II men (4.3%) compared with non-Sami men (2.6%). Missingness ($p<0.05$) was more common in Sami I women (6.1%) compared with non-Sami women (4.3%). It was no difference in the distribution of missing observations between Sami II and non-Sami women (data not shown).
Women tended to visit the GP more than men did.

4.3. Multinomial regression

Tables VI and VII show relative-risk ratios for visiting a GP 1–3 times relative to no visits, and 4+ visits relative to no visits within the last year for males and females, respectively.

Table VI: Relative-risk ratios (RRR) for number of GP visits during the past year in males (The SAMINOR 1 study 2003–2004).

	1-3 visit(s)			4 or more visits		
	RRR	p	95% CI	RRR	p	95% CI
Model 1[a]	n=7050					
Sami I	0.80	0.02	0.67-0.96	0.92	0.45	0.74-1.14
Sami II	0.97	0.62	0.84-1.11	1.11	0.22	0.94-1.31
Non-Sami	Ref			Ref		
Model 2[b]	n=5838					
Sami I	0.93	0.53	0.73-1.17	1.09	0.52	0.84-1.43
Sami II	0.93	0.42	0.79-1.10	1.15	0.17	0.95-1.39
Non-Sami	Ref			Ref		
Model 3[c]	n=5336					
Sami I	0.94	0.60	0.73-1.20	1.04	0.78	0.78-1.40
Sami II	0.92	0.33	0.77-1.09	1.06	0.62	0.86-1.30
Non-Sami	Ref					

Controlling for:
[a] age.
[b] age + satisfaction with GP's language skills.
[c] as b + education attainment, self-reported health, smoking habits, and leisure-time physical activity.

In men, a difference between non-Sami and Sami I with regard to 1–3 GP visits relative to no visits was observed (RRR 0.80, 95% CI: 0.67–0.96). However, no other significant differences were found. In model 2, the differences between non-Sami and Sami I with regard to 1–3 GP visits was weakened (RRR 0.93) and became insignificant (95% CI: 0.73–1.17).

Sami I women seem to be less likely to have visited their GP 1–3 times compared with non-Sami (RRR 0.78, 95% CI: 0.62–0.96).

Women in the Sami II group seem to visit their GP slightly more frequently than non-Sami females (Model 1), RRRs of 1.15 for 1–3 visits (95% CI: 0.96–1.38) and 1.34

for 4+ visits (95% CI: 1.11–1.61) indicate a slight increased probability of primary health care usage among Sami II relative to non-Sami.

Table VII: Relative-risk ratios (RRR) for number of GP visits during the past year in females (The SAMINOR 1 study 2003–2004).

	1-3 visit(s)			4 or more visits		
	RRR	p	95% CI	RRR	p	95% CI
Model 1[a]	n=7485					
Sami I	0.78	0.02	0.62-0.96	1.05	0.69	0.83-1.32
Sami II	1.15	0.12	0.96-1.38	1.34	<.01	1.11-1.61
Non-Sami	Ref			Ref		
Model 2[b]	n=5940					
Sami I	0.88	0.36	0.66-1.17	1.19	0.26	0.88-1.61
Sami II	1.21	0.08	0.97-1.51	1.40	<.01	1.11-1.76
Non-Sami	Ref			Ref		
Model 3[c]	n=5254					
Sami I	0.92	0.62	0.67-1.27	1.20	0.30	0.85-1.69
Sami II	1.16	0.21	0.92-1.46	1.20	0.15	0.93-1.54
Non-Sami	Ref			Ref		

Controlling for:
[a] age.
[b] age + satisfaction with GP's language skills.
[c] as b + education attainment, self-reported health, smoking habits, and leisure-time physical activity.

In model 2, the differences between non-Sami and Sami I women with regard to 1–3 GP visits was attenuated (RRR 0.88) and became insignificant (95% CI: 0.66–1.17). The difference between non-Sami and Sami II women was more or less unchanged in Model 2. When selected lifestyle factors were included in the model (Model 3), the discrepancy with regard to 4+ visits between non-Sami and Sami II was attenuated (RRR 1.20) and became insignificant (95% CI: 0.93–1.54). The lifestyle factors seem to contribute more or less equally to explaining the increased probability of 4+ GP

visits among female Sami II (data not shown). The included lifestyle factors (Model 3) did not affect the difference between non-Sami and Sami I women.

The sensitivity analysis including marital status, satisfaction with the distance to the GP office, the GP's cultural knowledge, and overall satisfaction with the GP services, did not affect the end-result (data not shown). Furthermore, there was no evidence suggesting that effect modification affected the overall result (data not shown).

5. Discussion of main results

Previous studies from the 1980s have suggested great disparities in utilization of health care between the Sami and non-Sami populations [4,5]. In this thesis, overall, small differences in the number of GP visits during the past year were found when comparing Sami and non-Sami men and women in rural areas in Norway. For men, a difference between non-Sami and Sami I with regard to 1–3 GP visits relative to no visits was observed (RRR 0.80, 95% CI: 0.67–0.96); this might be explained by dissatisfaction among Sami I with regard to the GP's language skills. However, no other significant ethnic differences were found in GP visits in men.

Compared with non-Sami women, Sami I women were less likely to have visited the GP 1–3 times relative to no visits (RRR 0.78, 95% CI: 0.62–0.96). This disparity was however due to the fact that Sami I women, tended to visit their GP 4+ times more often than did the non-Sami women (RRR 1.05, 95% CI: 0.83–1.32). Nonetheless, the GP's language skills may also play a role in terms of GP utilization in Sami I women as the ethnic difference with regard to 1–3 visits was attenuated and became insignificant in Model 2. An important point to mention is that the question concerning a person's satisfaction with the GP's language skills provide meaningful information only if that person actually have been to the GP. Those in the "no visits" group have not been to the GP the past year; I thus assume that the information provided by them herein refers to visits made more than one year ago.

Sami II women were more likely to have visited the GP more than three times during the past year. This disparity was perhaps explained by a somewhat (yet marginally) poorer risk profile. Sami II women, compared with non-Sami women, tended to

smoke more, be less physically active, and report poorer SRH status. These are well-established determinants of GP and health care utilization [72-74].

However, despite some highly significant ethnic differences, the point estimates were relatively small and the corresponding confidence intervals indicated associations close to the null in both men and women. The relatively low precession is related to the small numbers, especially in the Sami I group.

In 2004 (when the SAMINOR 1 data was gathered), it was estimated that the Norwegian population on average visited the GP 2,2 times per year [39]. Of those who visited the GP, about 60% were women. The number of visits generally increases with age for both men and women. However, the numbers from 2004 was estimated on the basis of only a selected part of the Norwegian population. On average, 76% of the Norwegian population visited their GP in 2006: 82 % of women and 70 % of males [76]. A similar trend is seen in this thesis.

Communication is important in health care. As Sami I individuals speak the Sami language at home, we could assume that the dissatisfied referred for the most part in their answers to the GP's lack of Sami language skills. Studies have indicated that patient expectations and the relationship between patient and GP is an important factor [54,55], also for the degree of satisfaction [77]. Bongo has indicated that the Sami population might have a different view of health and disease than the Norwegian majority [49], which might translate into different expectations, communication of symptoms, understanding of the prescribed treatment and subsequent a different rating of the encounter. Even if the GP and the patient speak

the same language (for instance Norwegian), the ethnic background might facilitate a difference in interpretation of symptoms, behavior and use of wording [78]. In this thesis, more than 20% of the male and more than 30% of the female Sami I participants report that they were dissatisfied with the GPs language skills ($p < .001$ for both men and women) (see table I and II). Corresponding numbers for Sami II are 4.9% for men, 5.7% for women and non-Sami participants are under 2% for both sexes. Using the same data as is used in this thesis, Nystad et al. also found that 90% of the responders reported that misunderstandings rarely happened due to language difficulties [5], suggesting that the GP's actual language skills are not a problem (in this context it should be mentioned that the only 1.6% of the SAMINOR1 questionnaires were answered in Sami, thus not supporting a potential barrier due to the spoken language). What the dissatisfaction is actually an expression of is unknown; perhaps this merely is an expression of a strong wish to receive GP services in Sami, and that some Sami speakers do not fully and properly manage to convey symptoms and expectations in the Norwegian language. It should also be mentioned, that some municipalities (including the Administrative Area) has had challenges with unstable GP coverage and lack of continuity, resulting in, that 1 out of 5 GP positions were held by foreign speaking doctors [5]. (The municipalities of Kautokeino and Porsanger had more unstable GP coverage compared with the other municipalities in the county of Finnmark [31]. Challenges for stable recruitment and retention of GPs has been difficulties in adapting to a new environment, lack of social network and professional isolation [31]. Poor GP continuity can also contribute to an overall dissatisfaction with the services [31,72,77], and may explain why some are dissatisfied with their GP's language skills. The Ministry of Health and Social Affairs has in 2001 stated [78], that those who wished for a Sami speaking GP was all

assigned to one [31]. (According to Nystad et al [5] only 1 Sami-speaking GP practices within the Administrative Area during period of the SAMINOR 1 study.) The results presented may indicate that the GP's communicative skills may affect the experience of primary health care usage in the Sami I group relative to the non-Sami group for both men and women.

Hansen [30] have found SRH to be the most important predictor of GP utilization in the Tromsø study. As mentioned earlier, compared with other life style factors, SRH contributed equally towards explaining the observed disparity in GP usage between non-Sami and Sami II women. It should be kept in mind, that there could be a difference in how SRH is understood and conceptualized [43], also in reference to the potential difference in understanding of health and disease between the Sami and the Norwegian majority [49]. Again, this difference might be more pronounced in the older part of the population [48]. Studies from abroad suggest that indigenous populations generally report poorer SRH status compared to the majority [43]; this is also observed in this thesis and in a previous publication in SAMINOR 1 [48].

Hansen et al. [48] argue in another SAMINOR 1 publication that SES and self-reported ethnic discrimination contributes to difference in SRH between the Sami and non-Sami population. Despite the general development in Northern Norway [14,19], it seems that the Sami population (to some extent) is still prone to ethnic discrimination [46], which may act as means to poorer SRH [48] and subsequent increased use of GP care [47].

The results found in this thesis differs somewhat from results found in other countries [1,2,41-45]. A comprehensive cross-national comparison of differences in indigenous health and GP utilization is beyond the scope of this thesis, and is difficult to carry out due to the diversity in indigenous populations and the different challenges that indigenous peoples faces, only selected examples will be given. However, commonly challenging for the indigenous peoples are changes and adjustments to westernized lifestyles: colonization and rapid social and environmental changes has led to large differences in SES and subsequent inequity in health status and health care utilization between the indigenous peoples and the majority [1,2,41-45].

High prevalence of preventable infections (for instance Tuberculosis [1,79]) and emerging chronic, lifestyle related diseases (due to poorer risk profiles) are currently seen among indigenous populations [1,2,41-45]. For instance in New Zealand, where 44% of the Māori population was smokers compared to 18% of the majority [80]. Lower levels of LTPA were reported 1.5 times more often in indigenous then non-indigenous Australians [58].

As stated by Marmot et al. [45], SES is a major determinant of health status, independent of ethnicity. Disparities in education attainment is seen for instance Greenland where 65% of the adult indigenous population do not have education beyond primary and lower secondary school, compared to a little over 20% of the Danish majority [81]. On a similar basis, a 20% gap in post-secondary education is seen between the Aboriginal and non-Aboriginal population in Australia [82]. Low SES and health disparities among indigenous peoples are described throughout the literature [1,2,41-45].

The merely small differences in GP utilization fund in this thesis is probably due to equal SES; the level of SES, and relevant risk factor included in this thesis, were more or less the same across the ethnic groups. The previously mentioned development after WWII and the subsequent lifestyle changes has probably happened independent of ethnicity, resulting in equal living standards, level in education and access to health care across ethnicity [14,19,83]. This thesis did not find differences in education attainment between the Sami and non-Sami women (see table II). Equal levels of education between the Sami and non-Sami population is seen in other SAMINOR 1 publications as well [45,84].

Low SES in combination with geographical remoteness of the indigenous communities are factors contributing to unequal access and utilization of health care services [42,44,45].

According to Marmot [45], universal health care coverage is paramount in order to to attenuate the disparities in utilization due to low SES [85]. The financial burden that some indigenous populations in other countries might experience should be at a minimum in Norway, just as the list system in Norway was introduced in order to improve GP access, stabilized the patient-GP relationship and improved equity in utilization for the population as a whole; this has to some extent been successful [86].

To sum up; small, but statistically significant ethnic differences in number of GP visits during the past year were observed in this study.

5.1. Methodological considerations

There are some methodological issues and limitations in this study that must be addressed before interpreting the findings.

The SAMINOR 1 study was designed as a cross-sectional study. A cross-sectional design can give information on the prevalence of diseases and risk factors in a defined population. Choosing a cross-sectional study design is quite useful if you want a descriptive design that gives you information on an outcome and possible risk factors [87]. Limitations includes the fact that information on exposure to risk factors and the presence or absence of disease is gathered simultaneously and thereby gives no evidence on the sequence of events.

Due to this, it is difficult to determine temporal relationships of causes and effects [88]. Repeated cross-sectional studies can be used to determine changes in risk factors and the prevalence, but again, not the nature of association. A cross-sectional design can be useful for generating hypotheses that can be tested in possible future prospective studies.

5.2. Bias

As with other study designs, biases can also be introduced in a cross-sectional design. The biases mentioned in the below are some that might be introduced in the SAMINOR 1 study and thus in this thesis.

Two types of errors can occur in epidemiological research, i.e. systematic- and random errors. Systematic error, i.e. bias, affects the comparison groups in the study unequally and results from methods used by the investigators [88]. Random error affects the reliability of the measurement and the precision of the estimate [88].

Validity is always a goal in any epidemiological study. The opposite of validity is bias. Validity contains two dimensions, namely internal and external; the former is a premise for the latter. If the results are correct for the population being studies, then the study has internal validity. Most violations of internal validity can be classified into three general categories: selection bias (see chapter 5.2.1.), information bias (see chapter 5.3), and confounding (see chapter 5.4) [89]. If the results of a study can be generalized to other populations (who were not actually studied), then the study has external validity [87,89].

In SAMINOR 1, external validity refers to whether or not the general population in the area included in the SAMINOR 1 study is systematically different from the general population in the northern part of Norway, and whether or not the responders are systematically different from those who did not participate [69].

Included in this thesis are roughly 50% of those that were invited (see table III).

5.2.1. Selection bias

Selection bias occurs when individuals have different probabilities of being included in the study according to relevant study characteristics, (i.e. exposure and the outcome of interest) [48]. Selection bias can cause biased prevalence estimates and distortion of the measure of association between exposure and outcome.

The participants in SAMINOR 1 were not chosen at random, everybody within a limited geographical area, aged 30 and 36-79 was invited [8]. The geographical area

for the SAMINOR 1 study was chosen because it is assumed to have a high concentration of Sami inhabitants based on a census from 1970 [8]. This assumption overcomes the difficult task of choosing geographical limits. Due to the lack of public records, the geographical limits are based on data that is gathered more than 40 years ago. A strict geographical limit seems imprecise and might not fully cover the target population as far as for ethnicity [28,90]. Approximately 20,000 responders (out of almost 140,000) in the 1970 Census reported that they did not know if they considered themselves to be Sami, did not want to report ethnic affiliation or left the question unanswered [91]. The questionnaires were perceived as highly controversial and sensitive at the time. As a result of this, it might have been distributed unevenly among eligible participants thereby not showing a true reflection of the population [91,92] and thus underestimating the number of Sami inhabitants. Thus, information bias in the 1970 census may have contributed towards introducing selection bias in the SAMINOR 1 study.

It can, of course be questioned to what extent the participants are representative and truly reflect the eligible population as a whole. Since no public, updated record exists it is difficult to further assess this question. However, based on the above, it seems most likely that Sami affiliation is somewhat under-reported. But again, ethnicity is not easy definable, this will be elaborated on in chapter 5.3.1.

The main exposure in this thesis is ethnicity, and a potential selection bias may either weaken or strengthen the association between ethnicity and utilization of GP services.

5.2.2. Non-response bias

Some potential responders selected for a study, do not participate. This may introduce non-response bias, which is a type of selection bias. The initial and overall participation rate in the SAMINOR 1 study was 60.9%, and only 53.5% of the invited sample was included in this thesis. We do not know the response rate by ethnicity; this is a weakness in the SAMINOR 1 study.

Participation and response rates/proportions in epidemiological studies have been declining over the past years [93]. Population-based studies in Norway are no exceptions [94]. Galea and Tracy [93] claim, that there are some essential factors for why response rates are dropping. Among other things, this can be due to increased demands to participate in research (and other surveys in general). Potential responders therefore do not feel that their contribution is unique and worthwhile [93]. Other reasons mentioned are declining in voluntarianism and also, that potential responders are more likely to participate in studies with a content that is of personal interest. Some potential responders might find the research topic controversial and in contrast to personal believes [93]. Contradicting information from researchers and the scientific environment about benefits, risk factors and recommendations leave potential responders confused and unsecure of health claims and advice. Finally, responders are being asked to participate in more and more complex and demanding studies, thereby increasing the burden on the responders [93].

The HUNT study and the Tromsø study are, just as the SAMINOR 1 study, population-based studies in Norway. Both studies have experienced a decline in participation rate [92,95]. On that basis, the researchers behind the HUNT study

warranted a non-participation study. Non-response in the HUNT study was associated with age <40, male sex, low SES, being single, unhealthy lifestyle (tobacco smoking, alcohol-, drug abuse and physical inactivity), and severity of symptoms and diseases [94]; people burdened by severe symptoms and disease, might not have the excess energy to participate. Similar trends were seen in the Tromsø study where non-participants were for the most part single, young or old men [33,95]. Younger non-participants reported that they were too busy to participate due to occupational obligations, and older non-participants reported that they went to check-ups on a regular basis (and thus did not feel the need to participate in a health screening)[96]. The prevalence of chronic diseases like cardiovascular diseases and diabetes mellitus was higher among non-participants, whereas participants often reported problems like muscoskeletal pain, urine incontinence and headaches [93].

As mentioned earlier, low response rate was also seen in the beginning before Q1 and Q2 was combined and sent together with time and date for clinical examination. Participants aged 30 was excluded from the analyses in the SAMINOR 1 study due to low response rate [67], a trend also seen in the HUNT and the Tromsø study [93,95]. A total of 702 responders were excluded from this analysis due to not having reported number of GP visits (see figure 3). A non-response rate of about 40% in SAMINOR 1 could cause concern about non-response bias [48]. Limited information is however available on the non-responders in SAMINOR 1, but they were mainly young, unmarried men [70], thus in line with what is seen in other epidemiological studies in Norway. It should also be mentioned, that in this thesis, model 3 only included 39% of the responders (10,590 answered out of 27,151 eligible), meaning that more than

60% of those invited did not answer all the questions included in the final model and hence were excluded in the analyses.

Non-responders can affect a study in different ways and since the SAMINOR 1 study was presented as a screening for cardiovascular disease, the participation might have been affected since the name and scope of study might appeal differently to different people. Previous research has stated, that more healthy people (worrying about cardiovascular disease) might participate ("healthy volunteer effect"), causing underestimation [84]. At the same time, more diseased people might also find this disease interesting and the study relevant thereby causing overestimation [70]. As mentioned in the above, the younger male non-participants claimed that they were too busy with jobs to attend a study. With that in mind, it seems unlikely that they are burdened by disease and was thus less likely to visit their GP. Since they do not participate, it is impossible to take their low utilization rate into account.

Overall, it has been argued, that the results in SAMINOR 1 generally can be generalized to the Sami and non-Sami living in the rural areas of northern Norway. However, they may have less validity for the population in the county of Nordland due to the low response rate in this region [70].

5.2.3. Information bias

Varying methods of determining the share of Sami inhabitants have been used in the past, thus suggesting difficulties to properly measure Sami affiliation [8,91,92].

Despite the fact that the numbers vary with the different methods,, all demonstrate high numbers of Sami speaking inhabitants in the Administrative Area and a somewhat lower proportion in the surrounding municipalities [28].

Information bias causes misclassification, either differential (bias either toward or away from the null hypothesis) or non-differential (toward the null hypothesis). This could be due to imperfect definitions of study variables or wrongful data collection. Recall bias is commonly seen in cross-sectional studies [87]: if the participants are unable to recall and/or remember the event of interest, it can lead to misclassification. If the information collected about or from the responders is incorrect, the result will be under- or over reported thus leading to imprecise results [87].

The information on utilization of GP services in this thesis depends on self-reporting; standardized questions might be interpreted differently by different people [97]. What constitutes a GP visit might not be perceived universally and therefore not reported in the same way by all responders. Responders are more prone not to report a minor event (e.g. a routine GP visits) or things that happened in the past, thus causing under-reporting and misclassification [97] (a smaller timespan could be applied when asking about previous GP visits, but that causes other challenges, e.g. seasonal variation in utilization). No research has been done in order to check for accordance on utilization data directly from GP offices and the self-reported utilization [28]. According to Gaski, data on utilization from the GP offices are used merely for billing purposes and at the moment not suitable for research purposes [28]. A study by Peersman et al. [97], using a national sample, reports that under- and/or over reporting of utilization of GP services depend on the characteristics of the responders. The study did however

show a high level of agreement between self-reported utilization and the GP's registered contacts, thereby validating self-report as a measure [97]. This trend is confirmed by other studies as well [99]. Since the GP and emergency GP potentially could be the same specific person, it could cause misclassification if not differentiated properly between the two, in the end causing misclassification due to recall-bias.

If participants perceive a question as sensitive or intrusive, it can affect the overall response rate, the item non-response rate and the accuracy [87]. As stated earlier, the Sami responders may have a different perception of health and disease than Norwegian participants [49] and questions regarding health, disease and use of GP services might be a more sensitive topic for the Sami responders, thus causing this group of responders to under-report, consequently resulting in differential misclassification due to ethnicity. Item non-response with regard to the dependent variable was more common in Sami than non-Sami (see chapter 4.2). This may indicate some misclassification with regard to the question on GP use. How this may have affected the overall result is however difficult to determine.

5.3.1. Ethnicity as a source of information bias

Ethnicity is associated with factors such as culture, norms, beliefs, SES, diet, lifestyle, access to and accordance with health care advice and stress [100]. Ethnicity is defined by Thomas Hylland-Eriksen [101] as… *"an aspect of social relationship between persons who consider themselves an essentially distinctive from members of other groups of whom they are aware and with whom they enter into relationships. It can thus also defined as social identity. .."* (p. 16-17). Ethnicity is not "objective", but is also constructed socially; meaning that different ethnic groups might share or are

believed to share certain characteristics, that are not fixed or measured easily. It varies what constitutes a relevant ethnic difference. Classification of ethnicity may be based on markers such as color of the skin, distinctive clothing, economic adaption, religion, norms, beliefs, language or any combination of these [101].

In the SAMINOR 1 study, ethnic affiliation is also measured by variables that measure the use of Sami, Kven and Norwegian as domestic language. Hunt et al. [102] directs attention to, that when studying topics that involve ethnicity and different ethnic groups, it is very easy to assume that the differences (that might or might not) exists are due to cultural differences [102]. It could be questioned to what extent a measure like language or ethnicity appropriately address the behavior of interest that may be relevant in terms of utilization of GP services. Language could simply be a collective term that, in lack of better criterias, covers material barriers such as economical means, transportation, education and also lack of language skills [102] and expectations to the health care system. In the SAMINOR 1 study, the initial questionnaire contained questions about ethnicity. Responders were asked about domestic language in the last three generations (responder, parents and grandparents), ethnic background, and whether they consider themselves to be Sami (self-perceived ethnicity); meaning that ethnicity in this study is conceptualized as a social category rather than biological, thereby not taking potential genetic factors into account. The concept of self-perceived ethnicity is controversial. Some have regarded Sami ethnicity in general as an unreliable measurer [92,103] and suggested that a clear and strict distinction of different ethnic groups is both complex and difficult [104], also in the light of the lack of a proper and updated registry and the ignorance of potential genetic factors. According to Bhopal, family background and self-perceived ethnicity

are acceptable variables when classifying ethnicity [104], even though self-perceived ethnicity is dynamic and can change over time. The attempt to assimilate the Sami population could have had an impact of the current Sami populations self-feeling and thus willingness to report Sami affiliation. In coastal areas many Sami people do not speak Sami due to the effectiveness of the assimilation attempts [48]. According to other studies, 6% of the participants reported uncertainty when asked about grand mothers domestic language [48]. On the other hand, the attempt to revitalize the Sami culture has reversed (or at least softened) the previous stigma [48]. According to Gaski, the Sami population has developed to different extends following the assimilation process and is now less homogenous than before, resulting in differences in cultural norms/habits, place of residence, language skills and perhaps also a changed feeling of self-perceived ethnicity [28].

In lack of a public, updated record it is difficult to assess the degree of a potential misclassification. A relevant question is of course, to what extent a potential misclassification of ethnicity would affect the results presented in this thesis. A potential non-differential misclassification of ethnicity will weaken a potential true effect of ethnicity on GP use. Based on the above, it seems plausible that "true" Sami II individuals may be misclassified as non-Sami and vice versa, as Sami II belonging only requires one single Sami identity mark (see Chapter 3.3). However, it seems unlikely to me that this misclassification is dependent upon GP use; hence, the assumed exposure misclassification is most likely non-differential.

Whether misclassification has been introduced in the included covariates is an issue beyond the scope of this thesis. However, misclassification of confounding variables

may have affected the degree to which I have been able to control properly for confounding effects [105].

5.4. Confounding factors

A confounder can be looked at as a "third" variable that gives non-causal associations [106]. The confounding variable is causally associated with the outcome and non-causally or casually associated with the exposure, but is not an intermediate variable in the causal pathway between the exposure and the outcome [106]. Stratification was done by sex, and age is controlled for throughout this thesis, since they are well-documented confounders. Multivariable analyses were also done in order to adjust for potential major confounders. Due to the limitations in this thesis it is not possible to include all potential confounders. The variables included were: age, satisfaction with GP's language skills, education attainment, SRH, smoking habits and LTPA.

Bhopal [104] argues, that ethnicity, as a variable is rarely a source of causal knowledge in itself, but is directly or indirectly related to factors such as culture, SES, diet, lifestyle, access to and concordance with health care advice, and stress. By definition, Bhopal then, may not perceive ethnicity as part of a causal chain leading up to health and other related outcomes. This invites a discussion on whether or not our included covariates may be perceived as confounding or intermediate variables [106]; the short answer is that probably both confounding and intermediate variables influence the ethnic variation in GP use in this study. An in-depth discussion on this matter is beyond the scope of this thesis.

Age standardization with regard to number of GP visits the past year was done (see table IV+V) in order to eliminate any confounding caused by age. As seen in the tables above, there is practically no observed difference between the crude and standardized prevalence rates: it is therefore unlikely that age is a confounding factor when it comes to the ethnic variation in numbers of visits to a GP during the past year.

This thesis does not include information on the association (if any) between "geographical distance to the GP's office" and "number of visits to the GP". However, we controlled for satisfaction with the distance to the GP office without observing a confounding effect.

The GP services are to a large extent publicly funded through taxes, meaning that economy or health insurance should not be of importance. The above applies for everybody, regardless of ethnic origin or place of residence and should not constitute as a factor in utility.

Use of emergency GP, specialist's and alternative medical practitioner services was not taken into account.

As stated earlier, the Administrative Area has had unstable coverage of GP positions occasionally leaving some without a specific GP [31]; this may perhaps have influenced the GP use among the Sami and non-Sami living in small rural municipalities in this study. As previously mentioned, the sample of non-Sami is dominated by respondents from one large municipality (Alta); such large

municipalities generally has had stable GP coverage. There has been a 10% decline in GPs generally in Norway from 1990-2011 [107]. It could be argued, that lack of stable GPs on the one-hand side decrease hospital and out-patient specialist referral rates [108,109]. However, the lack of continuity at the same time also increases the number of outpatient visits and hospitalizations [31,33,72,98]. It could be speculated to what extend the population uses the hospital (for instance the emergency room), emergency GP or alternative medical practitioner as a substitute for the GP, for instance due to a higher level of accessibility. The hospital emergency room and the emergency GP are both available for services during evenings and weekends.
Also, as stated earlier, the responders might have differences in perception of health, disease and different expectations to the patient-GP encounter and there might be cultural and lifestyle related factors that affect the utilization of the GP that we do not know about and thus cannot control for.

6. Conclusion

Sami health and health care utilization is currently on the political agenda in Norway. Little is however known about utilization of GP, hence the question in this thesis of whether or not there are differences in health care utilization in areas with both Sami and non-Sami populations in Norway. Previous assumptions have focused on under-utilization.

The findings in this thesis confirm findings from other recent studies; overall, small differences in the number of GP visits during the past year were found when comparing Sami and non-Sami women and men in rural areas in Norway. Merely small differences in GP use was found in this thesis, and this may be due to the fact that the whole population in the north of Norway has undergone development in living conditions over the past centuries, independent of ethnicity. As of today, SES and living standards are probably more equalized than ever, and interaction takes place across ethnic groups to a greater extent.

However, further research is needed before one may draw any conclusion with regard to this matter. SAMINOR II will help shed further light on ethnicity and health care utilization in northern Norway.

7. Literature

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Appendix A
-Questionnaire

Helse- og levekårs-undersøkelsen

Personlig innbydelse

1. EGEN HELSE

Hvordan er helsen din nå? *(Sett bare ett kryss)*

☐ Dårlig (1) ☐ Ikke helt god (2) ☐ God (3) ☐ Svært god (4)

Har du, eller har du hatt?

	JA	NEI	Alder første gang
Astma	☐	☐	
Kronisk bronkitt/emfysem/KOLS	☐	☐	
Diabetes (sukkersyke)	☐	☐	
Fibromyalgi/kronisk smertesyndrom	☐	☐	
Psykiske plager som du har søkt hjelp for	☐	☐	
Hjerteinfarkt (sår på hjertet)	☐	☐	
Angina pectoris (hjertekrampe)	☐	☐	
Hjerneslag/hjerneblødning	☐	☐	
Multippel sklerose (MS)	☐	☐	
Ulcerøs kolitt	☐	☐	

	JA	NEI
Får du smerter eller ubehag i brystet når du: Går i bakker, trapper eller fort på flatmark?	☐	☐
Kan slike smerter opptre selv om du er i ro?	☐	☐

2. MUSKEL OG SKJELETTPLAGER

	JA	NEI
Har du i løpet av *det siste året* vært plaget med smerter og/eller stivhet i muskler og ledd som har vart *i minst 3 måneder* sammenhengende?	☐	☐

Har du noen gang hatt:	JA	NEI	Alder siste gang
Brudd i håndledd/underarm?	☐	☐	
Lårhalsbrudd?	☐	☐	

3. MAGE OG TARM SYMPTOMER

	JA	NEI
Har du hatt sure oppstøt, halsbrann eller brystbrann nesten daglig i minst en uke?	☐	☐
Har du noen gang hatt smerter eller verk i magen som har vart i minst 2 uker?	☐	☐

Hvis JA, hvor i magen sitter smertene? *(Sett ett kryss)*

☐ Øvre del ☐ Nedre del ☐ Hele magen

Er smertene eller «verken» jevnt over tilstede? *(Sett ett kryss)*

I perioder av ukers varighet ☐

I perioder av måneders varighet ☐

Bestandig ☐

	JA	NEI
Er du ofte plaget av oppblåsthet, rumling i magen eller rikelig luftavgang?	☐	☐

3. MAGE OG TARM SYMPTOMER (fortsettelse)

Er avføringen din vanligvis: *(Sett ett eller flere kryss)*

☐ Normal ☐ Løs ☐ Hard og perlete

☐ Vekslende hard og løs ☐ Illeluktende

	JA	NEI
Har du i perioder tre eller flere avføringer daglig?	☐	☐
Har du hatt plager i mage/tarm etter inntak av melk?	☐	☐

Er det andre i familien som har de samme magesymptomene?

☐ Mor ☐ Far ☐ Søsken ☐ Barn ☐ Ingen

4. ANDRE PLAGER

Under finner du en liste over ulike problemer. Har du opplevd noe av dette *den siste uken* (til og med i dag)?

(Sett ett kryss for hver plage)

	Ikke plaget (1)	Litt plaget (2)	Ganske mye (3)	Veldig mye (4)
Plutselig frykt uten grunn	☐	☐	☐	☐
Føler deg redd eller engstelig	☐	☐	☐	☐
Matthet eller svimmelhet	☐	☐	☐	☐
Føler deg anspent eller oppjaget	☐	☐	☐	☐
Lett for å klandre deg selv	☐	☐	☐	☐
Søvnproblemer	☐	☐	☐	☐
Nedtrykt, tungsindig	☐	☐	☐	☐
Følelse av å være unyttig, lite verd	☐	☐	☐	☐
Følelse av at alt er et slit	☐	☐	☐	☐
Følelse av håpløshet mht. framtida	☐	☐	☐	☐
Tenkt på å gjøre slutt på livet ditt	☐	☐	☐	☐

5. SYKDOM I FAMILIEN

	JA	NEI	VET IKKE
Har en eller flere av dine foreldre eller søsken hatt hjerteinfarkt eller angina pectoris?	☐	☐	☐

Kryss av for de slektningene som har eller har hatt noen av sykdommene og angi deres alder for når de fikk sykdommene. *(Hvis flere søsken, før opp den som fikk det tidligst i livet)*

	Mor	Far	Søster	Bror	Barn	Ingen	Alder første gang
Hjerteinfarkt før 60-års alder	☐	☐	☐	☐	☐	☐	
Hjerteinfarkt etter 60 års-alder	☐	☐	☐	☐	■	☐	
Diabetes	☐	☐	☐	☐	☐	☐	
Hjerneslag	☐	☐	☐	☐	☐	☐	
Astma	☐	☐	☐	☐	☐	☐	
Tykktarmskreft	☐	☐	☐	☐	☐	☐	
Brystkreft	☐	☐	☐	☐	☐	☐	
Eggstokkreft	☐	■	☐	■	☐	☐	

Hvor mange søsken har du? ☐☐ Brødre ☐☐ Søstre

6. BRUK AV MEDISINER

Med medisiner mener vi her medisiner kjøpt på apotek. Kosttilskudd og vitaminer regnes ikke med her.

Bruker du?	Nå	Før, men ikke nå	Aldri brukt
Medisin mot høyt blodtrykk	☐	☐	☐
Kolesterolsenkende medisin	☐	☐	☐
Insulin	☐	☐	☐
Tabletter mot sukkersyke	☐	☐	☐

Hvor ofte har du i løpet av *de siste 4 ukene* brukt følgende medisiner? *(Sett ett kryss pr. linje)*

	Ikke brukt siste 4 uker	Sjeldnere enn hver uke	Hver uke, men ikke daglig	Daglig
Smertestillende uten resept	☐	☐	☐	☐
Smertestillende på resept	☐	☐	☐	☐
Sovemedisin	☐	☐	☐	☐
Beroligende medikamenter	☐	☐	☐	☐
Medisiner mot depresjon	☐	☐	☐	☐
Annen medisin på resept	☐	☐	☐	☐
	1	2	3	4

For de medisinene du har krysset av for i de to punktene ovenfor og som du har brukt i løpet av *de siste 4 ukene*:

Angi navnet og hvilken grunn det er til at du tar/har tatt disse (sykdom eller symptom): *(Kryss av for hvor lenge du har brukt medisinen)*

		Hvor lenge?	
Navn på medisinen: *(sett ett navn pr. linje)*	Grunn til bruk av medisinen:	Inntil 1 år	1 år eller mer
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Dersom det ikke er nok plass her, kan du fortsette på eget ark som du legger ved.

7. MAT OG DRIKKE

Hvor ofte spiser du vanligvis disse matvarene?
(Sett ett kryss pr. linje)

	Sjelden/ aldri	1-3 g. pr.mnd	1-3 g. pr. uke	4-6 g. pr. uke	1-2 g. pr. dag	3 g. el. mer pr. dag
Frukt	☐	☐	☐	☐	☐	☐
Bær	☐	☐	☐	☐	☐	☐
Ost *(alle typer)*	☐	☐	☐	☐	☐	☐
Poteter	☐	☐	☐	☐	☐	☐
Kokte grønnsaker	☐	☐	☐	☐	☐	☐
Rå grønnsaker/salat	☐	☐	☐	☐	☐	☐
	1	2	3	4	5	6

7. MAT OG DRIKKE (fortsettelse)

Hva slags fett bruker du oftest? *(Sett ett kryss pr. linje)*

	Bruker ikke	Meieri-smør	Hard margarin	Myk/lett margarin	Oljer	Annet
På brødet	☐	☐	☐	☐	☐	☐
I matlagingen	☐	☐	☐	☐	☐	☐
	1	2	3	4	5	6

Bruker du følgende kosttilskudd:

	Ja, daglig	Iblant	Nei
Tran, trankapsler?	☐	☐	☐
Fiskeoljekapsler *(omega 3)?*	☐	☐	☐
Vitamin- og/eller mineraltilskudd?	☐	☐	☐

Hvor mye drikker du vanligvis av følgende? *(Sett ett kryss pr. linje)*

	Sjelden/ aldri	1-6 glass pr. uke	1 glass pr. dag	2-3 glass pr. dag	4 glass el. mer pr. dag
Helmelk, kefir, yoghurt	☐	☐	☐	☐	☐
Lettmelk, cultura, lett yoghurt	☐	☐	☐	☐	☐
Skummet melk (sur, søt)	☐	☐	☐	☐	☐
Ekstra lettmelk	☐	☐	☐	☐	☐
Fruktjuice	☐	☐	☐	☐	☐
Vann	☐	☐	☐	☐	☐
Brus/Cola med sukker	☐	☐	☐	☐	☐
Brus/Cola uten sukker	☐	☐	☐	☐	☐
	1	2	3	4	5

Hvor mange kopper kaffe og te drikker du *daglig?*
(Sett 0 for de typene du ikke drikker daglig)

	Antall kopper
Filterkaffe	☐☐
Kokekaffe/trykkanne	☐☐
Annen kaffe	☐☐
Te	☐☐

Omtrent hvor ofte har du i løpet av det siste året drukket alkohol? *(Lettøl og alkoholfritt øl regnes ikke med)*

Har aldri drukket alkohol ☐ 1	Har ikke drukket siste år ☐ 2	Noen få ganger siste år ☐ 3	Omtrent 1 gang i måneden ☐ 4
2-3 ganger pr. måned ☐ 5	Ca. 1 gang i uka ☐ 6	2-3 ganger i uka ☐ 7	4-7 ganger i uka ☐ 8

Til dem som har drukket siste år:

Når du har drukket, hvor mange glass eller drinker har du vanligvis drukket? Antall ☐☐

Omtrent hvor mange ganger det siste året har du drukket så mye som minst 5 glass eller drinker i løpet av ett døgn? Antall ganger ☐☐

Når du drikker, drikker du da vanligvis: *(Sett ett eller flere kryss)*

☐ Øl ☐ Vin ☐ Brennevin

BRUK AV HELSETJENESTER

Hvor mange ganger de *siste 12 måneder* har du selv brukt:
(sett ett kryss for hver linje)

	Ingen	1-3 ganger	4 eller flere
Kommunelege/fastlege	☐	☐	☐
Spesialist	☐	☐	☐
Legevakt	☐	☐	☐
Sykehus innleggelse	☐	☐	☐
Hjemmesykepleie	☐	☐	☐
Kommunal hjemmehjelp	☐	☐	☐
Fysioterapeut	☐	☐	☐
Kiropraktor	☐	☐	☐
Tannlege	☐	☐	☐
Alternativ behandler	☐	☐	☐

Hvor *mange leger* har du selv vært hos de siste 12 måneder?

☐☐ *(angi antall)*

Har du fått tildelt navngitt fastlege? ☐ Ja ☐ Nei

Når du er til undersøkelse, hvilket språk kommuniserer du og legen på? *(sett ett eller flere kryss)*

☐ Norsk ☐ Samisk ☐ Bruker tolk ☐ Annet språk

Tror du det skjer noen gang at du og legen misforstår hverandre p.g.a. språklige problemer?

☐ Aldri ☐ Sjelden ☐ Av og til ☐ Ofte ☐ Usikker

Dersom det er behov for tolk, synes du at legen er flink nok til å be om det?

☐ Ja, alltid ☐ Ja, som regel ☐ Nei, ikke alltid
☐ Nei, aldri ☐ Jeg liker ikke å bruke tolk

Hvor fornøyd eller misfornøyd er du med følgende sider ved den kommunale *legetjenesten* i din bostedskommune?
(sett ett kryss per linje)

	Meget fornøyd	Fornøyd	Misfornøyd	Meget misfornøyd	Vet ikke
Avstand til legen	☐	☐	☐	☐	☐
Legens tilgjengelighet på telefon	☐	☐	☐	☐	☐
Ventetid på legetime	☐	☐	☐	☐	☐
Tid inne hos legen	☐	☐	☐	☐	☐
Mulighetene for å få fortalt om dine plager	☐	☐	☐	☐	☐
Legens forståelse av din kulturelle bakgrunn	☐	☐	☐	☐	☐
Legens informasjon om dine helseplager, undersøkelse og behandlingsopplegg	☐	☐	☐	☐	☐

BRUK AV HELSETJENESTER (fortsettelse)

	Meget fornøyd	Fornøyd	Misfornøyd	Meget misfornøyd	Vet ikke
Legens språkbeherskelse (samisk eller norsk)	☐	☐	☐	☐	☐
Totalt sett, hvor fornøyd eller misfornøyd er du med den kommunale *legetjenesten*?	☐	☐	☐	☐	☐

Hvor lenge er det siden du var hos lege sist? *(angi i hele tall)*

☐☐ *(år)* ☐☐ *(måneder)*

Dersom du noen gang har benyttet alternative behandlere, hvilke har du brukt? *(sett ett eller flere kryss)*

☐ Helbreder *(guvllár, leser, blåser, håndspålegger)*
☐ Healer
☐ Akupunktør
☐ Soneterapeut, homeopat, kinesiolog osv.

Dersom du har benyttet en alternativ behandler, hvor lenge er det siden sist? *(angi i hele tall)*

☐☐ *(år)* ☐☐ *(måneder)*

Tenk deg at du i dag skulle få behov for hjelp/bistand fra den kommunale helse- og sosialtjenesten *(hjemmesykepleie, hjemmehjelp, sosiale tjenester, fysioterapi o.s.v.)*

Vet du hvor du skal henvende deg?

☐ Ja ☐ Nei ☐ Usikker

Er du trygg på at du får hjelp hvis du trenger det?

☐ Ja ☐ Nei ☐ Usikker

Dersom du i dag får hjelp fra den kommunale helse- og sosial tjenesten, er du fornøyd med tilbudet?

☐ Ja ☐ Nei ☐ Usikker

SKADER/ULYKKER

Har du vært utsatt for noen ulykker som medførte behandling hos lege og/eller sykehusinnleggelse?

Lege ☐ Ja ☐ Nei ☐☐ antall ganger

Sykehus innleggelse ☐ Ja ☐ Nei ☐☐ antall ganger

SKADER/ULYKKER (fortsettelse)

Hvis ja, hva slags ulykke(r) er du blitt behandlet for?
(sett ett eller flere kryss pr. linje)

	Arbeid	Hjem	Fritid	Ingen
Bil	☐	☐	☐	☐
Motorsykkel	☐	☐	☐	☐
Snøscooter	☐	☐	☐	☐
Firehjulssykkel	☐	☐	☐	☐
Traktor	☐	☐	☐	☐
Fallulykke	☐	☐	☐	☐
Kuttskade	☐	☐	☐	☐
Annet	☐	☐	☐	☐

Har ulykken(e) ført til nedsatt arbeidsevne?

☐ Helt ☐ Delvis ☐ Ikke i det hele tatt

FAMILIE OG SPRÅKBAKGRUNN

I Nord-Norge bor det folk med ulik etnisk bakgrunn. Det vil si at de snakker ulike språk og har forskjellige kulturer. Eksempler på etnisk bakgrunn, eller etnisk gruppe er norsk, samisk og kvensk.

Hvilket hjemmespråk har/hadde du, dine foreldre og besteforeldre? *(sett ett eller flere kryss)*

	Norsk	Samisk	Kvensk	Annet, beskriv
Morfar:	☐	☐	☐	☐ .....
Mormor:	☐	☐	☐	☐ .....
Farfar:	☐	☐	☐	☐ .....
Farmor:	☐	☐	☐	☐ .....
Far:	☐	☐	☐	☐ .....
Mor:	☐	☐	☐	☐ .....
Jeg selv:	☐	☐	☐	☐ .....

Hva er din, din fars og din mors etniske bakgrunn?
(sett ett eller flere kryss)

	Norsk	Samisk	Kvensk	Annet, beskriv
Min etniske bakgrunn er:	☐	☐	☐	☐ .....
Fars etniske bakgrunn er:	☐	☐	☐	☐ .....
Mors etniske bakgrunn er:	☐	☐	☐	☐ .....

Hva regner du deg selv som? *(sett ett eller flere kryss)*

Norsk	Samisk	Kvensk	Annet, beskriv
☐	☐	☐	☐ .....

ARBEIDSLIV/ØKONOMI

Hvilken type arbeid/livsopphold har du? *(sett ett eller flere kryss)*

☐ Fastlønnet, heltid ☐ Fastlønnet, deltid
☐ Sesongarbeid ☐ Selvstendig næringsdrivende
☐ Arbeidsledig ☐ Hjemmeværende
☐ Alderstrygd ☐ Uføretrygd
☐ Annet *(beskriv)* .....

ARBEIDSLIV/ØKONOMI (fortsettelse)

Kunne du tenke deg å flytte fra din bostedskommune dersom du fikk tilbud om arbeid et annet sted?

☐ Ja ☐ Nei ☐ Deler av året ☐ Usikker

Dersom du er *arbeidsledig*, angi hvor lenge du har vært arbeidssøker: *(angi i hele tall)*

☐☐ *(år)* ☐☐ *(måneder)*

Dersom du er *selvstendig næringsdrivende*, hvilken type næring jobber du i? *(sett ett eller flere kryss)*

☐ Reindrift ☐ Fiske ☐ Jordbruk ☐ Skogbruk
☐ Forretningsvirksomhet ☐ Annet *(spesifiser)* .....

Hvor mange personer bor det i din husstand?

☐☐ *(antall personer)*

Hvor stor er familiens/husstandens bruttoinntekt per år?

☐ Under kr. 150 000 ☐ Kr. 150 000–300 000
☐ Kr. 301 000–450 000 ☐ Kr. 451 000–600 000
☐ Kr. 601 000–750 000 ☐ Over kr. 750 000

Hvor ofte spiller du på ulike pengespill slik som lotto, tipping, spilleautomater og lignende?

☐ Aldri/sjelden ☐ 1-3 ganger i mnd.
☐ 1 gang i uka ☐ 2-6 ganger i uka ☐ Hver dag

Hvor mye spiller du for ukentlig i gjennomsnitt?

☐ Under kr. 100 i uka ☐ Kr. 100-500 i uka
☐ Kr. 501–1000 i uka ☐ Over kr. 1000 i uka

MOBBING

Med mobbing mener vi når en eller flere personer *gjentatte ganger* sier eller gjør vonde ting mot deg, og du har vanskeligheter med å forsvare deg.

Har du vært utsatt for mobbing?

☐ Ja, de siste 12 mnd. ☐ Ja, før ☐ Nei

Dersom du har vært utsatt for mobbing, hvilken type mobbing er du blitt utsatt for? *(sett ett eller flere kryss)*

☐ Baksnakking ☐ Ignorering
☐ Diskriminerende bemerkninger ☐ Annet

Kan du angi hvor dette foregår/foregikk?
(sett ett eller flere kryss)

☐ På skolen ☐ På skoleinternat ☐ I yrkeslivet
☐ I lokalsamfunnet ☐ Annet

8. RØYKING OG BRUK AV SNUS

Hvor lenge er du vanligvis daglig i et røykfylt rom? Antall hele timer ☐☐

Røykte noen av de voksne hjemme da du vokste opp? ..... JA ☐ NEI ☐

Bor du, eller har du bodd, sammen med noen dagligrøykere etter at du fylte 20 år? ..... JA ☐ NEI ☐

Har du røykt/røyker du daglig? Ja, nå ☐ Ja, før ☐ Aldri ☐

Hvis du røyker daglig nå, røyker du:

Sigaretter? ..... JA ☐ NEI ☐

Sigarer/sigarillos/pipe? ..... JA ☐ NEI ☐

Rulletobakk/rullings? ..... JA ☐ NEI ☐

Hvis du har røykt daglig *tidligere*, hvor lenge er det siden du sluttet? Antall år ☐☐

Hvis du røyker daglig nå, eller har røykt tidligere:

Hvor mange sigaretter røyker/røykte du vanligvis daglig? Antall sigaretter ☐☐

Hvor gammel var du da du begynte å røyke daglig? Alder i år ☐☐

Hvor mange år til sammen har du røykt daglig? Antall år ☐☐

Har du brukt/bruker du snus daglig? Ja, nå ☐ Ja, før ☐ Aldri ☐

Hvis du bruker/har brukt snus, hvor mange år til sammen har du brukt snus? Antall år ☐☐

9. MOSJON OG FYSISK AKTIVITET

Hvordan har din fysiske aktivitet i <u>fritiden</u> vært <u>det siste året</u>? *(Tenk deg et ukentlig gjennomsnitt for året. Arbeidsvei regnes som fritid. Besvar begge spørsmålene)*

	Timer pr. uke: Ingen	Under 1	1-2	3 og mer
Lett aktivitet *(Ikke svett/andpusten)*	☐	☐	☐	☐
Hard fysisk aktivitet *(Svett/andpusten)*	☐ 1	☐ 2	☐ 3	☐ 4

Angi bevegelse og kroppslig anstrengelse i *<u>din fritid</u>*. Hvis aktiviteten varierer meget f. eks. mellom sommer og vinter, så ta et gjennomsnitt. Spørsmålet gjelder *bare det siste året.*

(Sett kryss i den ruta som passer best)

Leser, ser på fjernsyn eller annen stillesittende beskjeftigelse? ..... ☐ 1

Spaserer, sykler eller beveger deg på annen måte *<u>minst 4 timer i uka?</u>* ..... ☐ 2
(Regn også med gang eller sykling til arbeidsstedet, søndagsturer m.m.)

Driver mosjonsidrett, tyngre hagearbeid e.l.? ..... ☐ 3
(Merk at aktiviteten skal vare minst 4 timer i uka)

Trener hardt eller driver konkurranseidrett regelmessig og *<u>flere ganger i uka?</u>* ..... ☐ 4

10. UTDANNING OG ARBEID

Hvor mange års skolegang har du gjennomført?
(Ta med alle år du har gått på skole eller studert) Antall år ☐☐

Hvordan trives du i din jobb?

1 ☐ Svært godt 2 ☐ Godt 3 ☐ Dårlig 4 ☐ Veldig dårlig

Mener du at du står i fare for å miste ditt nåværende arbeid eller inntekt de nærmeste 2 årene? ..... JA ☐ NEI ☐

Mottar du noen av følgende ytelser? JA NEI

Sykepenger ..... ☐ ☐

Attføring ..... ☐ ☐

Sosialhjelp/-stønad ..... ☐ ☐

Overgangsstønad for enslige forsørgere ..... ☐ ☐

11. RESTEN AV SKJEMAET SKAL BARE BESVARES AV KVINNER

Hvor gammel var du da du fikk menstruasjon aller første gang? Alder i år ☐☐

Hvis du ikke lenger får menstruasjon, hvor gammel var du da den sluttet? Alder i år ☐☐

Er du gravid nå? Ja ☐ 1 Nei ☐ 2 Usikker ☐ 3 Over fruktbar alder ☐ 4

Hvor mange barn har du født? Antall barn ☐☐

Hvis du har født barn, fyll ut hvert barns fødselsår, og hvor mange måneder du ammet etter fødselen.
(Hvis du ikke ammet, skriv 0)

Barn:	Fødselsår:	Ammet antall mnd.:
1. barn	☐☐☐☐	☐☐
2. barn	☐☐☐☐	☐☐
3. barn	☐☐☐☐	☐☐
4. barn	☐☐☐☐	☐☐
5. barn	☐☐☐☐	☐☐

(Hvis flere barn, bruk ekstra ark)

Bruker du, eller har du brukt? *(Sett ett kryss for hver linje)*

	Nå	Før, men ikke nå	Aldri
P-pille/minipille/p-sprøyte	☐	☐	☐
Hormonspiral (ikke vanlig spiral)	☐	☐	☐
Østrogen (tabletter eller plaster)	☐	☐	☐
Østrogen (krem eller stikkpiller)	☐	☐	☐

Hvis du bruker/har brukt *reseptpliktig* østrogen:
Hvor lenge har du brukt dette? Antall år ☐☐

Hvis du bruker p-pille, minipille, p-sprøyte, hormonspiral eller østrogen; hvilket merke bruker du?

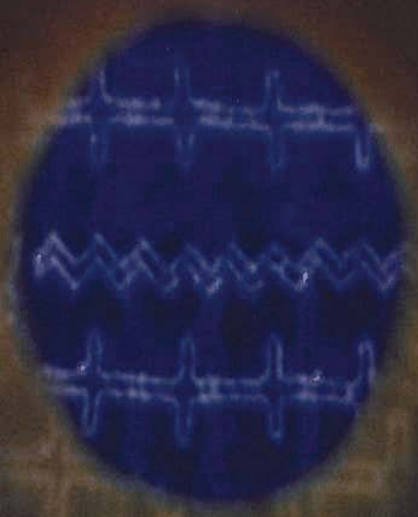
Spesifiser: _____

Ikke skriv her ☐☐ ☐☐

IN 2513-2040-1 - 40.000 - BJØRKMANNS TRYKKERI 02.03

Appendix B
-Invitation

folkehelseinstituttet



Nå skal vi sette fokus på helsen i kommunen din.
Hvordan står det egentlig til? Hvordan fungerer helsetjenesten?
Er det store helseforskjeller i de ulike delene av fylket eller mellom de ulike etniske gruppene? Er kvinner friskere enn menn?
Hvorfor øker sukkersyke her i landet?

Dál áigut giddet fuomášumi dearvvasvuhtii din gielddas. Mo dat duodas lea?
Mo doaibmá dearvvasvuođabálvalus? Leatgo stuorra dearvvasvuođaerohusat fylkka iešguđet osiin dahje iešguđet čearddalaš joavkkuid gaskkas?
Leatgo nissonat dearvasat go albmát?
Manne lassána sohkardávda dán riikkas?

Helseundersøkelsen har tre formål:

- Du som deltar i helseundersøkelsen får sjekket om du har bestemte sykdommer, eller om det er fare for at du kan få dem.
- Å få ny kunnskap om helse, sykdom og levekår i områder med samisk og norsk bosetting.
- Å lage en oversikt over folks helse – en «helseprofil» for fylket. Dette er viktig for å gi fylket og de enkelte kommunene et bedre grunnlag for å planlegge helsetjenesten i framtida.

Hvem kan delta?

Alle født 1925–1967 og i 1973 fra områder med samisk og norsk bosetting. Det er 9 kommuner i Finnmark, 6 i Troms, 4 i Nordland og 2 i Nord-Trøndelag med i undersøkelsen.

Hvordan får du time til helseundersøkelsen?

Du får tilsendt et spørreskjema sammen med innkallingen. Vi ber om at du fyller ut skjemaet hjemme og tar det med når du møter fram til helseundersøkelsen. Helseundersøkelsen vil foregå enten i buss eller i et fast lokale i kommunen. Hvis den oppsatte timen ikke passer, kan du møte når du vil innenfor åpningstiden vår. Undersøkelsen er gratis.

Hvordan foregår helseundersøkelsen?

Det gjøres målinger av blodtrykk, høyde, vekt og livvidde, og det taes en blodprøve. Blodprøven kan senere bli analysert på fettstoffer i blodet, blodsukker, markører for betennelsesreaksjoner, kosthold, hormoner, lever- og nyrefunksjon samt beinmarkører. Genetiske analyser av blodet kan også bli aktuelt.

Omtrent fire uker etter helseundersøkelsen får du et brev i posten med opplysninger om

Dearvvasvuođaiskkadeami dieđuin leat golbma ulbmila:

- Dus gii searvvat iskkadeapmái iskat leatgo dus dihto dávddat, dahje leago dus várra daid oažžut.
- Oažžut ođđa máhtu dearvvasvuođa, dávddaid ja eallindili birra sámi ja dáža ássanguovlluin.
- Ráhkadit várdosa olbmuid dearvvasvuođas – fylkka «dearvvasvuođaprofiilla». Dát lea dehálaš vai fylkkas ja juohke gielddas lea buoret vuođđu plánet boahttevaš dearvvasvuođabálvalusa.

Gii sáhttá searvat?

Juohkehaš riegádan 1925–1967 ja 1973 guovlluin gos ásset sápmelaččat ja dážat. 9 gielldda Finnmárkkus, 6 Tromssas, 4 Nordlánddas ja 2 Davvi-Trøndelagas leat iskkadeamis mielde.

Mo oaččut diimmu dearvvasvuođaiskkadeapmái?

Oaččut gažadanskovi oktan rávkamiin. Bivdit du deavdit skovi ruovttus ja váldit dan mielde go boađát iskkadeapmái. Iskadeapmi lea juogo busses dahje dihto lanjas gielddas. Jus biddjon áigi ii heive, de sáhtát boahtit vaikke goas min rahpanáiggis. Iskkadeapmi lea nuvttá.

Mo iskkojuvvot?

Varradeaddu, allodat, lossodat ja seakkáš mihtiduvvojit, ja váldo varraiskkus. Varraiskosis sáhttá maŋŋil iskat vara buoideávdnasiid, varrasohkkara, infekšunreakšuvnnaid mearkkaid, biepmu, hormonaid, vuoivvas- ja monimušdoaimma ja dáktemearkkaid. Vara genetalaš analysat maid soitet šaddat áigeguovdilat.

Sullii njeallje vahku maŋŋil dearvvasvuođaiskkadeami oaččut poasttas reivve ieżat kolestrola, varradeattu ja varrasohkkara birra, ja mo dat leat rávvejuvvon meriid ektui.

ditt kolesterol, blodtrykk og blodsukker, og hvordan du ligger an i forhold til anbefalte verdier. De som har særlig høy risiko for å få hjerte- og kar sykdommer og sukkersyke, vil bli bedt om å ta kontakt med sin egen lege for videre oppfølging.

Alle som møter fram til helseundersøkelsen, får et tilleggsskjema, med spørsmål om blant annet kosthold og levekår.

De som fullfører hele helse- og levekårsundersøkelsen vil være med i trekningen av 3 reisegavekort hver verdt kr. 10000,–. Vi regner med en deltakelse på ca. 15000 personer.

Vi trenger din tillatelse

Når du møter fram til helseundersøkelsen, ber vi deg om å undertegne et samtykke der du sier deg enig i et eller flere av de fire punktene nedenfor. (Du vil få kopi av samtykke erklæringen).

1) At du kan bli kontaktet med anbefaling om oppfølging, behandling eller for å forebygge sykdom.

2) At opplysningene dine kan brukes til medisinsk forskning etter vurdering og tilråding fra *Regional komité for medisinsk forskningsetikk i Nord-Norge* og *Datatilsynet*.

3) At resultatene dine (etter godkjenning fra *Datatilsynet*) kan settes sammen med opplysninger om deg i andre registre for forskningsformål slik som *Kreftregisteret, Dødsårsaksregisteret* og folketellingene. I alle disse tilfellene vil navn og personnummer bli fjernet. Forsikringsselskaper får ikke tilgang til dataene.

4) At blodprøven din kan lagres og brukes til medisinsk forskning og genetiske analyser for å finne årsak til sykdom. All bruk av denne prøven vil bare skje i samsvar med godkjenning fra *Datatilsynet* og etter at *Regional komité for medisinsk forskningsetikk i Nord-Norge* har vurdert og tilrådd prosjektet.

Bivdit sin geain lea hui alla váibmo- ja suotnadávddavárra ja sohkardávda, váldit oktavuođa iežaset doaktáriin joatkka čuovvoleapmái.

Juohkehaš gii boahtá iskkadeapmái, oažžu lassiskovi, gažaldagaiguin ee. biepmu ja eallindili birra.

Sii geat čađahit olles dearvvasvuođa- ja eallindilleiskkadeami leat mielde vuorbádeamen 3 mátkeskeaŋkakoartta man árvu lea 10000,– ru. guđesge. Doaivut ahte su. 15000 olbmo servet.

Mii dárbbašat du lobi

Go boađát iskkadeapmái, de bivdit du čállit vuollái miehtama, mas logat iežat leat ovttamielas ovtta dahje moatti dán njeallje čuoggás vulobealde (Miehtamis oačču t máŋgosa).

1) Ahte duinna sáhttá váldit oktavuođa go áigu rávvet čuovvoleami, dálkkodit dahje eastadit dávddaid.

2) Ahte visot du dieđut sáhttet adnot medisiinnalaš dutkamii *Regional komite for medisinsk forskningsetikk i Nord-Norge* ja *Datatilsynet* árvvoštallama ja rávvaga mielde.

3) Ahte du bohtosiid (*Datatilsynet* dohkkeheami mielde) sáhttá čohkket dieđuiguin du birra eará registariin dutkandoaimmaide nugo *Kreftregistret, Dødsårsaksregistret* ja olmmošlohkamat. Visot dáid oktavuođain sihkko namma ja personnummar. Dáhkádusfitnodagat eai beasa dáid dieđuid oaidnit.

4) Ahte du varraiskkus sáhttá ráddjot ja adnot medisiinnalaš dutkamii ja genetalaš analysaide gávnnahit dávddaid árttaid. Dán iskosa juohke geavaheapmi geavvá dušše *Datatilsynet* dohkkeheami mielde ja maŋŋil go *Regional komite for medisinsk forskningsetikk i Nord-Norge* lea árvvoštallan ja rávven prošeavtta.

Selv om du sier ja til dette nå, kan du senere ombestemme deg og be om å bli slettet fra undersøkelsen uten at du må oppgi noen grunn for det. Dette gjøres ved skriftlig beskjed til **Institutt for samfunnsmedisin, UiTø, 9037 Tromsø**. Blodprøven din vil da bli tilintetgjort.

Vi ønsker å følge alle som møter til helseundersøkelsen i lang tid framover med hensyn til hjerteinfarkt, hjerneslag og andre aktuelle sykdommer. Derfor ønsker vi å lagre opplysningene du har gitt, frem til fylte 100 år, for å sammenholde disse med opplysninger fra sentrale registre slik som *Kreft-* og *Dødsårsaksregisteret.*

Resultatene vil bli publisert i massemedia, og det utformes en rapport fra helse- og levekårsundersøkelsen når den er avsluttet.

Datatilsynet har gitt konsesjon for lagring av opplysninger fra undersøkelsen og forskningsprosjektet er tilrådd av *Regional komite for medisinsk forskningsetikk i Nord- Norge.*

Vaikke dása dál mieđat, de sáhtát maŋŋil molsut oaivila ja bivdit sihkkot iskkadeamis dieđitkeahttá makkárge ákka dasa. Dán dagat čálalaččat Institutt for samfunnsmedisinii; **Institutt for samfunnsmedisin, UiTø, 9037 Tromsø**. Du varraiskkus dalle bálkestuvvo.

Mii dáhtošeimmet guhkit áiggi čuovvut juohkehačča gii boahtá dearvvasvuođaiskkadeapmái váibmodohppehaga, vuoiŋŋašgáldnanvigi ja eará vejolaš dávddaid hárrái. Danne dáhtošeimmet rádjat du addán dieđuid, gitta devdon 100 jahkái, vai daid beassá sulastahttit guovddáš registariid dieđuiguin, nugo *Kreft-* ja *Dødsårsaksregistret.*

Bohtosiid almmuhat mediain, ja čállo raporta dearvvasvuođa- ja eallindilleiskkadeamis go dat lea loahpahuvvon.

Datatilsynet lea addán sierralobi rádjat iskkadeami dieđuid ja dutkanprošeavtta lea rávven *Regional komite for medisinsk forskningsetikk i Nord-Norge.*

Velkommen til helseundersøkelsen

Selv om du nettopp har vært hos lege eller selv om du føler deg frisk, kan du likevel delta i undersøkelsen. Da hjelper du oss til bedre kunnskap og riktigere oversikt over helsen i kommunen og fylket ditt.

Bures boahtin dearvvasvuođaiskkadeapmái

Vaikke leatge aiddo leamaš doaktára luhtte dahje dovddat iežat dearvvasin, de sáhtát liikká searvat iskkadeapmái. Dalle veahkehat min oažžut eanet máhtu ja riektasat dieđuid du gieldda ja fylkka dearvvasvuođas.

Dearvvuođaiguin / Med hilsen

Anne Kirsten Anti
Sámi dearvvašvuođadutkama guovddáš,
Senter for samisk helseforskning
Kárášjohka/Karasjok

Eiliv Lund
Institutt for samfunnsmedisin
Institutt for samfunnsmedisin
Romsa/Tromsø

Per G. Lund-Larsen
Nasjonalt folkehelseinstitutt/
Nasjonalt folkehelseinstitutt
Oslo

For mer informasjon, ring 78 46 89 04, Senter for samisk helseforskning, Kaŕasjok.
E-post: helseus@fagmed.uit.no

Jus dárbbašat eambbo dieđuid, čuojahastte 78 46 89 04, Sámi dearvvašvuođadutkama guovddážii, Kárášjohka. E-poasta: helseus@fagmed.uit.no

Gráfalaš barggus vástida/Grafisk utforming: Britt Hansen Biti – BHB Gráfalaš bálvalusat/Grafiske tjenester, Kárášjohka/Karasjok. Sámás: Davvi Girji OS.
Deaddilan/Trykk: Bjørkmanns Trykkeri, Alaheadju/Alta.

folkehelseinstituttet

Helse- og levekårsundersøkelse

– et forskningsprosjekt

Helsedepartementet har bedt oss undersøke helse- og levekårsforhold hos alle født i 1925–1967 og i 1973 i utvalgte kommuner med samisk og norsk bosetting i Nord-Norge og Nord-Trøndelag. Formålet er å innhente opplysninger om hjerte- og karsykdommer, kreft, allergier, smerter og andre lidelser samt ulykker for å kunne forebygge dem. Videre er målet å få et bilde av folks oppfatning av helsetjenestetilbudet, deres levesett slik som kosthold og røyking, levekår og tilhørighet. De som ønsker å delta, blir med i et forskningsprosjekt som består av spørreskjemaer og helseundersøkelse. Alle opplysninger fra undersøkelsen vil bli behandlet konfidensielt.

Helse- og levekårsundersøkelsen er nærmere beskrevet i brosjyren, som ligger vedlagt. Dersom du er i tvil om noe, kan du kontakte oss på tlf. 78 46 89 04 eller på e-post: helseus@fagmed.uit.no

Du kan delta på følgende måter: (kryss av øverst på spørreskjema under «samtykke til deltakelse»)

A Dersom du ønsker å delta i helseundersøkelsen og forskningsprosjektet, krysser du av punkt **A**, fyller ut spørreskjemaet og returnerer det til oss i vedlagte konvolutt. Du vil senere få et brev med tid og sted for fremmøte sammen med et nytt spørreskjema.

B Dersom du bare ønsker å delta i en innledende del av forskningsprosjektet uten helseundersøkelse, krysser du av punkt **B** , fyller ut spørreskjemaet og returnerer det til oss i vedlagte konvolutt.

C Du kan unngå purring fra oss ved å krysse av punkt **C** og returnere spørreskjemaet til oss. Purring vil skje skriftlig.

Datatilsynet har gitt konsesjon for lagring av opplysninger fra undersøkelsen og forskningsprosjektet er tilrådd av *Regional komite for medisinsk forskningsetikk i Nord- Norge.*

For forskningen sin del vil det være av stor interesse at vi får inn så mange opplysninger som mulig. Du deltar frivillig og kan, etter å ha sagt ja til deltakelse, senere trekke deg uten å begrunne hvorfor og uten at det vil ha noen konsekvenser for deg. Det samme gjelder dersom man i utgangspunktet ikke ønsker å delta. Opplysninger du har gitt kan du be om å få slettet.

Resultatene vil bli publisert i massemedia, og det utformes en rapport fra helse- og levekårsundersøkelsen når den er avsluttet.

De som fullfører hele helse- og levekårsundersøkelsen vil være med i trekningen av 3 reisegavekort til en verdi av á kr. 10 000,–. Vi regner med en deltakelse på ca. 15000 personer.

Med hilsen

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Dearvvasvuođa ja eallindilleiskkadeapmi

– dutkanprošeakta

Dearvvasvuođadepartementa lea min bivdán iskat dearvvasvuođa- ja eallindili juohkehaččas riegádan 1925–1967 ja 1973 dihto gielddain sámi ja dáža ássamiin Davvi-Norggas ja Davvi-Trøndelágas. Ulbmilin lea viežžat dieđuid váibmo- ja suotnadávddaid, borasdávdda, allergiaid, bákčasiid ja eará gillámušaid ja lihkohisvuođaid birra vai daid sáhtášii eastadit. Dasto lea ulbmilin diehtit olbmuid oaivila dearvvasvuođabálvalusa birra, sin eallinvuogi nugo biepmu ja borgguheami, eallindili ja gullevašvuođa birra. Geat háliidit searvat, leat mielde dutkanprošeavttas mas leat gažadanskovit ja dearvvasvuođaiskkadeapmi. Iskkadeami visot dieđut meannudduvvojit čiegusvuođas.

Dearvvasvuođa- ja eallindilleiskkadeapmi lea dárkilat válddahallon gihppagis mii čuovvu mielde. Jus eahpidat maidege, sáhtát gulahallat minguin tlf. 78 46 89 04 dahje e-poasta: helseus@fagmed.uit.no

Dán láhkai sáhtát searvat: (russe bajimučča gažadanskovis «mieđan searvamii» buohta)

A. Jus háliidat searvat dearvvasvuođaiskkadeapmái ja dutkanprošektii, de russet **A** čuoggá, deavddát gažadanskovi ja máhcahat dan midjiide čuovvu konfaluhtas. Maŋŋil oačču reivve mas čuožžu goas ja gosa boađát oktan ođđa gažadanskoviin.

B. Jus háliidat searvat dušše dutkanprošeavtta álgooasis almmá dearvvasvuođaiskkadeami haga, de russet **B** čuoggá, deavddát gažadanskovi ja máhcahat dan midjiide čuovvu konfaluhtas.

C. Eat rása jus russet **C** čuoggá ja máhcahat gažadanskovi midjiide. Rássan lea čálalaččat.

Datatilsynet lea addán sierralobi rádjat iskkadeami dieđuid ja dutkanprošeavtta lea rávven *Regional komite for medisinsk forskningsetikk i Nord-Norge.*

Dutkama dáfus lea hui miellagiddevaš ahte oažžut nu olu dieđuid go vejolaš. Don searvvat eaktodáhtolaččat ja sáhtát, maŋŋil go leat miehtan searvamii, geassádit vuođuškeahttá ja dutnje čuozakeahttá. Seamma guoská jus álggus juo ii hálit searvat. Dieđuid maid leat almmuhan sáhtát bivdit sihkkut.

Bohtosiid almmuhat mediain, ja čállo raporta dearvvasvuođa- ja eallindilleiskkadeamis go dat lea loahpahuvvon.

Sii geat čađahit olles dearvvasvuođa- ja eallindilleiskkadeami leat mielde vuorbádeamen 3 mátkeskeaŋkakoartta man árvu lea 10 000,– ru. guđesge. Doaivut ahte su. 15000 olbmo servet.

Dearvvuođaiguin

Anne Kirsten Anti
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Eiliv Lund
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Romsa

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Appendix C
-Consent form

INFORMERT SAMTYKKE

Jeg har lest informasjonen om undersøkelsen og samtykker i at (stryk det / de avsnitt du reserverer deg mot):

1. Jeg kan bli kontaktet med anbefaling om oppfølging, behandling eller for å forebygge sykdom.

2. Opplysningene mine kan brukes i medisinsk forskning til å kartlegge og finne årsaker til helse, sykdom og levekår. All bruk av opplysningene i eventuell framtidig medisinsk forskning vil bare bli brukt dersom Regional komité for medisinsk forskningsetikk og Datatilsynet ikke har noen innvendinger mot dette.

3. Etter godkjenning fra Datatilsynet kan opplysningene mine settes sammen med opplysninger om meg i andre registre for forskningsformål. I alle disse tilfellene blir navnet og personnummeret mitt fjernet. Det kan være registre om trygd, sykdom, inntekt, utdanning, yrke, og opplysninger fra de tidligere hjerte- og kar undersøkelsene. Eksempler på slike registre er Kreftregistret, Dødsårsaksregistret og folketellingene. Forsikringsselskaper vil ikke få tilgang til dataene.

4. Blodprøven min kan lagres og brukes til medisinsk forskning og genetiske analyser for å finne årsak til sykdom. All bruk av denne prøven vil bare skje i samsvar med godkjenning fra Datatilsynet og etter at Regional komite for medisinsk forskningsetikk i Nord- Norge har vurdert de etiske sidene ved gjennomføring av prosjektet.

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sted og dato underskrift