USE OF HYPNOTICS IN SÁMI AND NON-SÁMI POPULATIONS IN NORTHERN NORWAY

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ABSTRACT

Objectives. Our knowledge of the impact of indigenous culture on drug consumption is scarce. Based on the Sámi Health Study, we compare the use of hypnotics among the Sámi and non-Sámi people, living in the same area at 70°N in northern Norway.

Study Design. Cross-sectional survey based on a cardiovascular screening, including questionnaires and a clinical examination.

Methods. A total of 16 323 men and women born 1925 - 1967 in counties with a mixed Sámi and non-Sámi population responded to a questionnaire delivered at attendance of a health study. The response rate was 60%. The main analyses were restricted to 12 378 subjects with information on all relevant variables, including ethnicity and use of hypnotics.

Results. The prevalence of insomnia and use of hypnotics was significantly lower in the Sámi compared to the non-Sámi population in northern Norway (p < 0.0001). Regardless of ethnicity and age, prevalence of use of hypnotics in women was twice that of men. People who consulted modern, or traditional healers had a higher prevalence of use of hypnotics compared to those who did not.

Conclusions. The stronger the Sámi affiliation, the lower the prevalence of use of hypnotics. In general, insomnia is less frequently stated in the Sámi than in the non-Sámi study population. This may reflect a different attitude to sleep as a phenomenon among the Sámi.

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INTRODUCTION

The Sámi are considered to be an indigenous population according to international conventions (1). Today, people of Sámi origin live in most parts of the country, but there is still a concentration in the northernmost part of Norway, the “Sámi core area”. The process of assimilation has not been as strong in the county of Finnmark as in other parts of the country, and the Sámi culture has had better living conditions. The exact number of people belonging to this ethnic minority is not known, although an estimation gives a number of 50 - 70 000 (2).

The language, culture and life-style of the Sámi are different from those of the non-Sámi.

Traditionally, the occupations of the Sámi were linked to different primary trades, such as reindeer herding, sea fishing, agriculture, or a combination of several of these careers, while the diet was based on self-support. This is now changing.

The differences in culture could have effects on both health and health care-related topics, but little is known about drug use in Sámi people living in Norway.

In 1987-88, a study on drug use in the general population of Finnmark found no significant differences in the proportion of overall drug users according to ethnic origin (3). Yet, there is a problem that there is no common consensus how to classify ethnic belonging, and different studies use different classifications. Furthermore, different therapeutic groups of drugs may also show different patterns of use in different ethnic groups.

Searching the literature we have not been able to find studies focusing on the use of hypnotics among indigenous populations. Some studies, for instance from Sweden, describe a higher prevalence of use of hypnotics in ethnic minorities (4,5). These minorities, however, were immigrants/refugees, and not an indigenous minority like the Sámi. Thus, our study seems to be unique in examining this aspect in an indigenous population.

The Centre for Sami Health Research, Institute of Community Medicine, University of Tromsø, is responsible of the Sámi-Norwegian Health Survey (SÁMINOR). The administration and practical procedures for the study were developed in collaboration with the National Screening Program for Cardiovascular Diseases (SHUS), now incorporated into the National Institute of Public Health.

This survey of health and living conditions in a sample of municipalities in northern Norway aimed to investigate the prevalence of coronary heart disease, cancer, diabetes, asthma and lifestyle. Within the scope of the study, we describe the use of hypnotics in the Sámi and other population groups in the northern part of the country.

MATERIAL AND METHODS

The SÁMINOR study was a cardiovascular screening program focusing on diet, living conditions and fundamental values. The survey was based on both questionnaires and a clinical examination. The main questionnaire was one of five pages posing questions on health matters, drug consumption, physical activity, ethnicity, diet and socio-economic factors. An additional questionnaire of four pages, filled in at the screening or at home,
had questions mostly on diet and personal and cultural values.

Municipalities were selected on the basis of the proportion of Sámi people living in the municipality at the census in 1970 (6). In total, 24 different municipalities/election districts with more than 5-10 % Sámi people were chosen. All inhabitants born 1925-67 and those born in 1973 were invited to participate. However, due to a low response rate, and a low prevalence of drug consumption in the youngest group, those born in 1973 are not included in this paper. The study was recommended by the Regional Committee for Medical Research Ethics in Northern Norway and approval was granted by the Data Inspectorate.

During the period 2002-4, a postal questionnaire was sent to 27 150 subjects with an invitation to participate in the screening program. A total of 16 323 participated (response rate 60.1%). People of foreign origin (272), and those missing answers on ethnicity and language (66), were censored. The regression analysis included 12 378 with complete information on all relevant variables.

Classification of ethnicity
There have always been people of different origin in Northern Norway. They speak different languages and belong to different cultures, like Sámi, Kven (persons of Finnish descent in Northern Norway) and Norwegian.

The questionnaire had three questions on ethnicity
1. What language do / did you, your parents and grandparents use at home?
2. What is your, your fathers and mothers ethnic background?
3. What do you consider to be your ethnic group of belonging?

It was possible to fill in more than one alternative.

In the analysis, we carefully considered different models for grouping the study subjects. Based on the results of preliminary analyses, we decided on three categories based on the self-reported own, or kin language, regarded as a fairly objective criterion, eventually combined with ethnic background, or sense of belonging, which is a more subjective criterion.

Sámi I:
This category included those who answered “Sámi” on the first question.

(Among these, 98 % stated Sámi as ethnic background and 94 % expressed a sense of belonging to the Sámi group). This can be categorised as a mono-ethnic group.

Sámi II:
This category included those who had at least one parent, or grandparent, speaking Sámi language, or had a minimum of one personal Sámi affiliation (language, or sense of belonging)

(Among these, 52 % stated Sámi as ethnic background and 60 % expressed a sense of belonging to the Sámi group). This can be categorised as a mixed, or multicultural group.

Non-Sámi:
This category included those who had no Sámi affiliation (Kvens totalled 7.2 % of the study population).

For simplicity we have used the above-mentioned terms in the following text.
Questions on drug consumption

The questionnaire contained two main questions concerning the use of hypnotics.

1. How often during the last four weeks have you been using hypnotics?

Use was ticked as “daily use”, “weekly, but not daily use”, “use more seldom than weekly”, or “no use during the last four weeks”. The second question asked for the brand name of the drug, as well as the indication for use.

In the analyses, we have made a dichotomous variable combining all use into “use during the last four weeks”.

Classification of occupational activity

There were nine alternative answers of occupational activity in the questionnaire, which allowed responders to tick more than one answer. Based on these, we carefully grouped the alternatives and made a four category variable describing present occupations.

I Full-time employed (included self-employed)
II Part-time/seasonal work
III Other (homemaker, student, out of work, vocational rehabilitation, disability benefit)
IV Old-age pension

Insomnia

The study subjects were asked to indicate the degree of insomnia during the last week. Alternative answers were “no”, “some”, “a great deal”, or “severe” insomnia.

Consumption of alcohol

The question on frequency of alcohol consumption last year had eight possible answers:

“Never tasted alcohol”, “Not last year”, “A few times”, “Once a month”, “2-3 times a month”, “Once a week”, “2-3 times a week”, or “4-7 times a week”. In the analyses, we merged the answers into three categories: ”abstainer/not this year”, “seldom to once a week” and “two or more times a week”.

Use of traditional or modern healers

The questionnaire included several questions on the use of health care services. One question dealt with the use of alternative therapists, like modern healers, or traditional ones, like the Sámi guvllár.

Data analysis

SAS statistical software for Windows version 9.1 (SAS Institute Inc., Cary, NC, USA) was used for data processing and statistical analyses. Data was analysed using Cochran-Mantel-Haenszel Chi-Square tests and logistic regression. Using a forward stepwise procedure, the variables were entered into the model in the following order: occupational activity, sex, age, ethnicity, use of healers, county of residence and consumption of alcohol, all being significant at a level of 1%. Odds Ratios (OR) with corresponding 95% confidence intervals (CI) are presented.

RESULTS

The total prevalence of the use of hypnotics was 7.1%. The prevalence of the use of hypnotics was significantly lower in the Sámi I than in the non-Sámi group; 4% versus 8% (p < 0.0001). Sámi people also reported to suffer the least from insomnia; 29.0% in the Sámi I group versus 35.6% in the non-Sámi population (p < 0.0001) (Table I).

The majority of study subjects (62.1%) were living in the northernmost county, Finnmark.
The proportion of people 65-79 years was somewhat higher in the Sámi I than in the non-Sámi group (25.6% versus 21.5%).

A substantial proportion of the study population (26.3%) was out of work, on vocational rehabilitation or social security, or were homemakers, or students. Consumption of alcohol during the last year was more widespread among the non-Sámi (85.8%) than among the Sámi I (69.1%). Consumption of alcohol two or more times a week was more prevalent among the non-Sámi (11.3%) than in the Sámi I group (3.8%) (Table I).

**Table I. Characteristics of the study population (n=15 985).**

|                          | Sámi I | Sámi II | Non-Sámi | n  |
|--------------------------|--------|---------|----------|----|
| **Age (years)**          |        |         |          |    |
| 36-49                    | 33.8   | 38.5    | 35.9     | 5 787 |
| 50-64                    | 40.7   | 41.7    | 42.7     | 6 743 |
| 65-79                    | 25.6   | 19.8    | 21.5     | 3 455 |
| **Sex**                  |        |         |          |    |
| Female                   | 49.8   | 49.4    | 52.6     | 8 233 |
| Male                     | 50.2   | 50.9    | 47.4     | 7 752 |
| **County**               |        |         |          |    |
| Finmark                  | 87.2   | 67.3    | 55.2     | 9 933 |
| Troms                    | 8.0    | 28.5    | 26.2     | 3 886 |
| Nordland/Trøndelag       | 4.8    | 4.3     | 18.7     | 2 166 |
| **Occupational activity**|        |         |          |    |
| Full-time employed       | 47.6   | 47.7    | 47.2     | 7 492 |
| Part-time/seasonal       | 7.1    | 8.0     | 9.9      | 1 438 |
| Age-pension              | 19.9   | 15.1    | 17.5     | 2 731 |
| Other^                  | 25.4   | 29.2    | 25.5     | 4 165 |
| **Use of healers**       |        |         |          |    |
| Yes                      | 32.2   | 21.8    | 11.8     | 2 675 |
| No                       | 67.8   | 78.3    | 88.2     | 13 310 |
| **Problems of insomnia** |        |         |          |    |
| No                       | 71.0   | 66.9    | 64.4     | 9 342 |
| Some                     | 21.2   | 24.3    | 26.3     | 3 590 |
| A great deal             | 5.8    | 6.6     | 7.1      | 976  |
| Severe                   | 2.0    | 2.2     | 2.2      | 311  |
| **Use of hypnotics**     |        |         |          |    |
| Yes                      | 4.0    | 6.2     | 8.0      | 937  |
| No                       | 96.0   | 93.8    | 92.0     | 12 228 |
| **Alcohol consumption**  |        |         |          |    |
| Abstainer / Not this year| 30.9   | 16.8    | 14.2     | 2 458 |
| Seldom to once a week    | 65.3   | 74.4    | 74.6     | 10 846 |
| > two times weekly       | 3.8    | 8.7     | 11.3     | 1 456 |

Sámi I: People speaking Sámi language for three or more generations; Sámi II: At least one parent, or grandparent, speaking Sámi language, or having a minimum of one personal Sámi affiliation (language, or sense of belonging); Non-Sámi: People lacking Sámi affiliation (Kvens totalled 7.2% of the study population); ^Homemaker, student, out of work, vocational rehabilitation, social security; Numbers may not add up to N due to missing values in some variables.
Among the non-Sámi, the use of hypnotics was significantly more prevalent in the counties of Nordland and Trøndelag than in Troms. However, this was not the case among people of Sámi origin (Table II). The use of hypnotics during the last month was 2.5-4 times more frequent among unemployed people and people with insecure employment than among full-time employees.

While 6.0% of the Sámi I and 12.8% of the non-Sámi group with some sleeping-problems during the last week had used hypnotics during the last month.

Table II. Prevalence of use of hypnotics during the last month in three different populations according to variables in the SÁMINOR study.

| Variable               | Sámi I  | Sámi II | Non-Sámi | p-value* |
|------------------------|---------|---------|----------|----------|
| Age (Years)            |         |         |          |          |
| 36-49                  | 1.5 (522) | 2.9 (1216) | 4.2 (3345) | < 0.0001 |
| 50-64                  | 4.8 (621) | 6.7 (1217) | 8.2 (3696) |          |
| 65-79                  | 6.3 (363) | 12.7 (502) | 15.0 (1683) |          |
| n = 13 165             |         |         |          |          |
| County                 |         |         |          |          |
| Finnmark               | 3.6 (1305) | 5.2 (1995) | 7.0 (5015) |          |
| Troms                  | 7.8 (115) | 8.4 (806) | 8.9 (1998) |          |
| Nordland               | 5.8 (86) | 7.5 (134) | 9.9 (1711) |          |
| n = 13 165             |         |         |          |          |
| Occupational activity  |         |         |          |          |
| Full-time employed     | 2.0 (739) | 3.3 (1492) | 3.5 (4327) |          |
| Part-time/seasonal     | 4.9 (102) | 4.3 (232) | 6.3 (874) |          |
| Age-pension            | 7.4 (284) | 13.7 (371) | 15.6 (1338) |          |
| Other                  | 5.4 (367) | 8.5 (824) | 13.1 (2120) |          |
| n = 13 070             |         |         |          |          |
| Alcohol consumption    |         |         |          |          |
| Abstainer / Not this year | 5.2 (444) | 12.6 (436) | 12.9 (1111) |          |
| Seldom to once a week  | 3.3 (966) | 4.7 (2157) | 7.1 (6428) |          |
| > two times weekly     | 3.3 (60) | 5.7 (263) | 7.7 (1032) |          |
| n = 12 897             |         |         |          |          |
| Insomnia               |         |         |          |          |
| No                     | 1.2 (1006) | 1.0 (1913) | 1.1 (5420) |          |
| Some                   | 6.0 (302) | 9.8 (652) | 12.8 (2154) |          |
| A great deal           | 21.4 (84) | 31.6 (190) | 35.4 (615) |          |
| Severe                 | 35.7 (28) | 48.3 (58) | 60.2 (191) |          |
| n = 12 613             |         |         |          |          |
| Use of healers         |         |         |          |          |
| Yes                    | 3.3 (512) | 8.4 (664) | 12.0 (1045) |          |
| No                     | 4.4 (994) | 5.5 (2271) | 7.4 (7679) |          |
| n = 13 165             |         |         |          |          |

Sámi I: People speaking Sámi language for three or more generations; Sámi II: At least one parent, or grandparent, speaking Sámi language, or having a minimum of one personal Sámi affiliation (language, or sense of belonging); Non-Sámi: People lacking Sámi affiliation (Kvens totalled 7.2 % of the study population); aHomemaker, student, out of work, vocational rehabilitation, social security; bIncluding missing; *Test for difference between ethnic groups adjusted for the different variables.
the last month, users amounted to 35.7% and 60.2%, respectively, among those with severe sleep-problems.

People consulting modern healers, or traditional healers like the Sámi guvllár, had a higher prevalence of use of hypnotics than those who did not, especially among the non-Sámi (Table II).

The prevalence among women (9.4%) was two times that among men (4.7%), and the total prevalence increased with age, from 3.6% in the age group 36-49 years, to 13.3% among those 65-79 years. Regardless of sex and age, the prevalence among non-Sámi people was about double that observed among those with the strongest Sámi belonging (Table III).

In order to look at significant predictors of use of hypnotics, we used a stepwise logistic regression model including ethnicity, as well as age, sex, county, consumption of alcohol, use of traditional or modern healers, occupational activity and insomnia. When the variable insomnia was allowed into the model, it totally dominated all other variables. Nevertheless, ethnicity, age, sex, living in Troms county, being an old-age pensioner, or having an occupational activity “other”, were still strongly significant (< 0.0001). Consumption of alcohol, however, was not significant.

We performed an adjusted, insomnia-stratified analysis. Being in the Sámi I group, the odds ratio for using hypnotics when suffering from insomnia was estimated to be 0.43 (95% CI 0.30-0.61) relative to that when being non-Sámi (Table IV).

| Table III. Prevalence of use of hypnotics during the last four weeks in male and female populations. |
|---------------------------------------------------------------|
| **Years** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** |
| Age | | | | | | | | |
| 36-49 | 1.3 | 1.9 | 3.0 | 1.8 | 3.8 | 5.2 | 2.7 | 4.3 | 5.2 | 8.1 | 10.5 |
| 50-64 | 2.7 | 4.9 | 5.1 | 7.2 | 8.8 | 11.4 | 4.3 | 7.8 | 19.8 |
| 65-79 | 4.3 | 7.9 | 9.8 | 8.5 | 18.3 | 19.8 | 4.3 | 8.1 | 10.5 |
| All | 2.7 | 4.3 | 5.2 | 5.4 | 8.1 | 10.5 |

n = 13 165;
Sámi I: People speaking Sámi language for three or more generations;
Sámi II: At least one parent, or grandparent, speaking Sámi language, or having a minimum of one personal Sámi affiliation (language, or sense of belonging);
Non-Sámi: People lacking Sámi affiliation (Kvens totalled 7.2 % of the study population).

| Table IV. The impact of ethnicity on the use of hypnotics in people with and without insomnia. |
|---------------------------------------------------------------|
| **Variables** | **No insomnia** | **Some - severe insomnia** |
| Ethnicity | OR (95% CI) | OR (95% CI) |
| Three generations Sámi | 0.89 (0.45-1.78) | 0.43 (0.30-0.61) |
| Sámi affiliation | 0.96 (0.56-1.65) | 0.82 (0.66-1.01) |
| Non-Sámi | Ref. | Ref. |

n = 12 378;
The odds ratio and 95% confidence interval for use of hypnotics adjusted for the variables included in the regression model: age, sex, county, occupational activity, consumption of alcohol and use of healers.
DISCUSSION

Insomnia and the use of hypnotics were significantly less prevalent in Sámi than in non-Sámi people (p < 0.0001) in northern Norway. Sámi people living in Finnmark and speaking Sámi through at least three generations had the lowest prevalence of all. The prevalence of use of hypnotics in women is twice that of men in all age groups, independent of ethnicity. An insecure, or difficult employment situation is predictive of the use of hypnotics, while the prevalence of use of hypnotics among people with full-time employment (self-employed included) is low, regardless of ethnicity.

Sales, and most likely use, of hypnotics and sedatives becomes more frequent in the south of Norway. Sales statistics show that hypnotics and sedatives are less often used in the county of Finnmark, at 56% the national average (DDD/1000 inhabitants/day). Corresponding numbers for the counties of Troms, Nordland, and Trøndelag are 69, 89 and 92%, respectively (7). Why the use of hypnotics among people of Sámi origin seems to be more prevalent in the county of Troms than in the counties of Nordland and Trøndelag is not obvious, but it could be related to different degrees of acculturation and urbanization. These processes started in the southernmost coastal areas, like Troms, where they have been most extensive (8). In Trøndelag and parts of Nordland, the Sámi communities are often more isolated and located in the inland area. Hence, it is reasonable to assume a greater resemblance between Sámi and non-Sámi drug use patterns in Troms. National sales figures for 2004 suggest that 6% of the Norwegian population had a daily consumption of hypnotics, or sedatives. This figure is calculated by dividing the total sales (in DDDs) by the total number of inhabitants in Norway. It does not take into account whether all medicines are actually used, possible high consumers, or the fact that hypnotics are not commonly used, for instance, by children and adolescents. Prevalence of use of hypnotics in the adult Norwegian population has been found by others to be 7% (9). Our finding is consistent with this.

However, the observed difference between Sámi and non-Sámi people in the prevalence of insomnia and the use of hypnotics is striking. Despite the somewhat higher proportion of elderly people in the group with the strongest Sámi affiliation (26 versus 21% aged 65-79 years), the prevalence of use of hypnotics is half that of the non-Sámi.

It is not inconceivable that culture may have an impact here. Values and beliefs are important suppliers of terms of health. Since basic health culture develops in interaction with one’s social environment, the Sámi culture plays an important role here. Central to the Sámi culture is the opinion that nature is home, the people are part of nature and, thus, dependent upon it. There is a tight connection between the physical environment and health culture, and the people have adapted to the features of the environment, such as light and temperature (10). It is therefore possible that Sámi people cope more easily with seasonal changes in these elements than do the non-Sámi.

Research on Sámi child rearing has demonstrated that, in spite of a strong assimilation policy, Sámi parents’ attitudes and practices in child rearing are remarkably well preserved.

For instance, self-regulation of food and sleep was commonly practiced. Sámi mothers were more permissive than non-Sámi mothers.
in letting children stay up late if they wanted to, in allowing them to rejoin their parents after having been put to bed, and in regulating bedtimes according to the season. The two ethnic groups also differed as to the importance they placed on the regularity of sleep (11). Sámi parents emphasized inner control, as opposed to exterior control, aiming at independence, toughness and inner strength in their children. This background may contribute to a different attitude towards sleep and a more relaxed way of dealing with sleeping-problems, or periods in life with less sleep.

Earlier studies have shown the use of the health care system to increase the likelihood of being a legal drug user (3,12). However, when problems of insomnia are perceived, one could imagine several ways of coping with these, for instance by making use of traditional, or complementary medicine. This could replace academic medicine and favour a low consumption of ordinary drugs like hypnotics. Our data, however, did not confirm this hypothesis. Overall, people who had been to an alternative therapist, like a healer, had a higher prevalence of use of hypnotics than those who had not.

The traditional Sámi world includes traditional healers, like the Sámi guvllár. The guvllár is believed to have power to both heal and cause illness. He can open up access to an inner energy that is regarded to be generally favourable, especially when feeling ill. Hence, in case of illness, Sámi people make contact with the guvllár not as a substitute for seeing a general practitioner, but more as a general precaution and for spiritual strengthening.

Consumption of alcohol may be another way to compensate a low prevalence of use of hypnotics. It has been assumed that alcohol use and abuse would be more prevalent in the Sámi populations than in non-Sámi. This assumption was partly based on data on drinking behaviour found in comparable minorities. There is, however, no data to support this hypothesis (13). In line with this, we found the proportion of frequent drinkers (two or more times a week) to be 11% in the non-Sámi, compared to 6% in the Sámi populations (data not shown). Regardless of ethnicity, users of alcohol have a lower prevalence of use of hypnotics than have abstainers.

A weakness of the study is the 10-15% missing answers to the question on the use of hypnotics and other relevant variables. The proportion of missing answers to questions on drugs affecting the nervous system is higher compared to other questions on legal drugs in the SAMINOR study. This may be due to the sensitiveness, or the wording, of these questions.

Use of hypnotics was ticked as “daily use”, “weekly, but not daily use”, “use more seldom than weekly” or “no use during the last four weeks”. People who use hypnotics sporadically perhaps did not find any of these alternatives relevant, and therefore failed to answer. However, the overall prevalence of use of hypnotics in the study seems to be in agreement with sales figures and prevalence numbers from other studies.

Our study has described the use of hypnotics in the Sámi and other population groups in the northern part of Norway. To our knowledge, the use of hypnotics in Sámi populations has not been described earlier, and our knowledge of the impact of the Sámi culture on drug consumption is scarce. The study results encourage further research into this field among indigenous populations in the north,
and among indigenous people in general. There is also a need for further studies of the impact of indigenous culture in neighbouring fields, such as the perception of health and health-seeking behaviour.

Conclusions

The prevalence of insomnia and the use of hypnotics is significantly lower in the Sámi than in the non-Sámi population in northern Norway. The stronger the Sámi affiliation, the lower the prevalence of use of hypnotics. This may reflect a different attitude to sleep as a phenomenon among the Sámi.

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