

ORIGINAL ARTICLE

PREVALENCE OF SUICIDAL BEHAVIOUR AMONG INDIGENOUS SAMI IN NORTHERN NORWAY

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ABSTRACT

Objectives. To summarize knowledge about suicidal behaviour among indigenous Sami living in northern Norway.

Study design. This summary is based on data from a register-based follow-up study (Study I) and the North Norwegian Youth Study (Study II) — a longitudinal questionnaire study conducted in 1994–1995 and 1997–1998.

Methods. The cohort from Study I included 19,801 persons with Sami ethnic ancestry, 10,573 (53.4%) men and 9,228 (46.6%) women. The cross-sectional sample analysed from Study II (1994/1995/T1) included 2,691 adolescents (1,402 females, 52%, and 1,289 males, 48%) aged 16–18 years.

Results. Study I indicated that there was a significant moderate increased risk for suicide among indigenous Sami (SMR=1.27, 95% confidence interval (CI):1.02-1.56) compared to the reference population. In Study II, there were no significant ethnic differences in the prevalence of suicide attempts between Sami adolescents (10.5%) and their non-Sami peers (9.2%).

Conclusions. Although the finding of a moderate significant increased risk of suicide among Sami is consistent with the general findings among Indigenous peoples, the suicide rates found among Sami is moderate compared to several others Indigenous peoples. When it comes to suicide attempts, no ethnic differences in prevalence of suicide attempts were found between Sami adolescents and their non-Sami peers.

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INTRODUCTION

Suicidal behaviour is a severe public health problem in circumpolar areas, and especially high suicide rates are found among Indigenous peoples. The Sami people is one of these Indigenous groups residing in circumpolar areas. The Sami population is estimated to be about 100,000 individuals living in northern Fennoscandinavia, including the Russian Kola Peninsula. The majority (70%) of Sami live in Norway, where they are formally considered an Indigenous people with their own culture and native language. Over the last 30 years, a process of integration and increased ethnic revival has gradually replaced a history of forced assimilation and colonization. The outcome of the acculturation and the ethnic revitalization processes has varied in different regions inhabited by the Sami. The assimilation process had the greatest impact on the coastal communities where the Sami became a minority, and many Sami lost their Sami identity and language (1). In this area, prejudice and ethnic conflicts related to land rights and to teaching in the Sami language are still present, and as well there is little structural and practical support for Sami culture. However, in the highland communities, the majority of the population is Sami and Sami-speaking, and several Sami institutions are located there, such as the Sami Parliament, and Sami research and broadcasting centres. In addition, education in the Sami language is possible from elementary school to college. There is a well-organized indigenous-oriented health and social service of a high professional level run by Sami medical doctors, social workers, nurses and so on. The strengthening of the

Sami culture in this area has taken place particularly over the last 3 decades.

There is no record of ethnicity in the national population register of Norway, nor are their official statistics of health and living conditions; subsequently, there are no suicide rates for the Sami population. So far, very limited research on Sami health and living conditions has been conducted, including limited research on suicidal behaviour problems. Although several Sami communities have experienced high rates of suicide, specific prevention strategies are lacking. Epidemiological knowledge about suicidal behaviour among the Sami is important for the implementation of appropriate prevention strategies in Sami communities, which could also be useful to public health practitioners and policymakers in addressing this problem.

This summary presents suicide mortality rates among the Sami and lifetime prevalence of self-reported suicide attempts among Sami adolescents. The findings are discussed in the light of the socio-economic situation and living conditions of present-day Sami in Norway.

MATERIAL AND METHODS

This summary presents data collected from two studies. Study I, a register-based follow-up study with a focus on suicide mortality among Sami in northern Norway in the time period 1970–1998. Study II, the North Norwegian Youth Study, a longitudinal epidemiological study of high school students in the northernmost counties of Norway: Finnmark, Troms and Nordland.

Sample descriptions

Study I

In Study I, the national census from 1970 was used to define the Sami cohort, as there is no ethnicity information in the national population register of Norway. In connection with the national census in 1970, a survey of Sami ancestry was performed in preselected census tracts in the 3 northernmost counties of Norway: Nordland, Troms and Finnmark (see Aubert, 1978). The census was carried out by Statistics Norway in co-operation with Sami organizations (1). The selected census tracts covered 6.1% (n=14,760) of the population in Nordland (n=241,967), 22.9% (n=31,160) in Troms (n=136,070) and 89.7% (n=67,954) in Finnmark (n=75,757). The follow-up on suicide incidences took place from the beginning of November 1970 (date of census) to the end of 1998. The follow-up included 471,028 person years, 245,408 for men and 225,620 for women, respectively. Altogether, 5,955 deaths (of these, 500 were violent deaths and 5,455 deaths were from various diseases) and 172 emigrations were observed in the cohort. A summary of the Study I sample characteristics are shown in Table I. A more detailed description of the sample and the procedure in Study I are provided elsewhere (2).

Study II

The first wave in the North Norwegian Youth Study was in 1994–1995 (T1), and the second was in 1997–1998 (T2). The students completed a questionnaire covering several topics central to adolescence, including suicidal behaviour, such as suicidal ideation and suicide attempts. In this summary, only cross-sectional data from T1 are presented. At T1 all high school students (15–21 years) in

the study's schools were invited to participate in the survey (n=4,019). The overall response rate was 85% (n=3,417). There were 286 (7%) who refused to participate, 260 (6%) who did not adequately complete the form for a variety of reasons, and 56 (1%) students who withdrew from the study. Students from other ethnic groups (n=33), those who had incomplete identification numbers (n=25) and students who were younger than 16 years or older than 18 years (n=306) were also excluded. Thus, the sample analysed (1994–1995) included 2,691 students (1,402 females, 52%, and 1,289 males, 48%) aged 16 to 18 years (mean age 16.9, SD 0.8 years) with no differences in the mean age between the genders or between the ethnic groups. The sample consisted of 591 (22%) indigenous Sami (323 females and 268 males; 55% and 45%, respectively) and 2,100 (78%) non-Sami subjects (1,079 females and 1,021 males; 51% and 49%, respectively). A more detailed description of the North Norwegian Youth Study is provided elsewhere (3–6). A summary of the Study II baseline sample characteristics (T1) is shown in Table I.

Table I. Survey and sample descriptions^a.

	Study I	Study II
Invited (n)	113,874	4,019 ^b
Participants	113,874	3,417
Response rate	100%	
	85%	
Analysing sample (n)	19,801	2,691 ^c
Age; mean, SD		16.9, 0.8
Female %	46.6%	
	52%	
Indigenous Sami (n)	19,801	591

^aAdapted from Silvikén, Haldorsen, Kvernmo, 2006:21:707–713, and Silvikén, Kvernmo, 2007:30:613–626.

^bStudents aged 15 to 21 years were invited to participate.

^cPart-time students, responders not reporting their grade level, foreign ethnicity and incomplete/incorrect data and participants who were younger than 16 years or older than 18 years were excluded.

Classification of ethnicity

In Study I, ethnicity was categorized according to 4 questions about Sami ancestry, which were supplemented in the 1970 Census forms in the selected areas (1). Was Sami the first language spoken by the person? (yes/no) (2) Was Sami the first language spoken by one of the person's parents? (yes/no/don't know) (3) Was Sami the first language spoken by one of the person's grandparents? (yes/no/don't know?) (4) Does the person consider himself/herself a Sami? (yes/no/uncertain/don't want to answer) If the subject answered positively on one of the 4 questions he/she was categorized as Sami. The first 3 questions were considered to be of an objective character and the last question to be a subjective character.

In Study II, several measures were used to tap various aspects of ethnicity. However, ethnicity was defined according to a set of objective measures. Maternal and paternal language and languages for each of the 4 grandparents were reported separately with alternatives identified as "Norwegian," "Sami," "Kven," "Finnish" or "other." Similarly, the ethnicity of the parents (separately) was assessed using the same answer choices as for the language questions. For all questions, more than one language/ethnicity was allowed. Using the method described by Kvernmo and Heyerdahl (2003; 2004), these items were combined into one ethnicity variable. Consequently, adolescents were classified as Sami if one of the parents' ethnicity was reported as Sami or if one of the grandparents' or parents' languages was Sami (4,7).

The definitions of suicidal behaviour/suicide, suicide attempts and suicide ideation

The outcome variable in Study I was suicide registered by the Norwegian Causes of Death

Register. Cases of suicide were identified by the International Classification of Diseases (ICD-10, codes X60-X84, Y87.0). Recoding from ICD-8 and ICD-9 was done accordingly.

In Study II, the outcome variable was lifetime prevalence of suicide attempts which was measured with the question, "Have you ever tried to commit suicide?" The response categories were "yes" and "no."

Statistics

In Study I, the mortality of suicide in the cohort was compared with that of the rural population within the same 3 counties in Arctic Norway, weighted according to the number of Sami in each. Gender, 5-year calendar periods and 5-year age groups were used for computing reference rates. Expected values were computed by multiplying the person years in the cohort by the reference rates. Standardized mortality ratios (SMRs) were computed by taking the ratio of observed to expected cases of suicide. For these estimates, the 95% confidence intervals (95% CI) were computed, based on the assumption that observed suicides/cases follow the Poisson distribution.

In Study II, chi-square tests were performed. Data analyses were performed with the SPSS 13.0 software.

RESULTS

Suicide mortality among Sami in the study period 1970–1998

Study I indicated that there was a significant moderate increased risk for suicide among Sami (SMR=1.27, 95 % confidence interval (CI):1.02–1.56) compared to the reference population (2). In the study period, 89 suicides

occurred in the cohort (70 men and 19 women) with increased suicide mortality both for Sami males (SMR=1.27; 95% CI: 0.99–1.61) and females (SMR=1.27; 95% CI: 0.77–1.99). The estimated mortality rate in the study period was 18.5 suicides per 100,000 person years, 28.5 for Sami men and 8.4 for Sami women, respectively.

Suicide attempts among Sami adolescents and their non-Sami peers

Study II indicated no significant ethnic differences in prevalence of suicide attempts between Indigenous Sami adolescents (10.5%, n=62) and their non-Sami peers (9.2%, n=194) (3). However, there were significant gender differences in both ethnic groups. The gender differences were more pronounced among Sami adolescents, with females twice as likely as males to report a suicide attempt (14%, n=44 vs. 7%, n=18, $p \leq .05$).

DISCUSSION

Overall, this summary presents data on prevalence of suicidal behaviour among Sami living in northern Norway. A significant increased risk of suicide mortality was found in the Sami cohort compared to the reference population in the study period 1970–1998 (Study I). In terms of suicide attempts, no ethnic differences in prevalence of suicide attempts were found between Sami adolescents and their non-Sami peers (Study II). However, data indicate that Sami have a moderate prevalence of suicidal behaviour compared to several other Indigenous peoples residing in circumpolar areas. For example, among Greenlandic Inuit, the suicide rate is

100 per 100,000 and lifetime prevalence of suicide attempts among adolescents is 23% (8,9). The estimated mortality rate in the study period among Sami, 18.5 suicides per 100,000 person years, is more similar to the suicide rate found in the general Norwegian population in the study period about 13 per 100,000 (10). Moreover, the prevalence of suicide attempts among Sami adolescents (10.5%) corresponds well with results from a representative national Norwegian sample (8.2%) (11).

What can explain the moderate rates of suicidal behaviour among Sami in Norway?

In the context of Indigenous suicidal behaviour, socio-cultural factors and socio-economic conditions are important risk indicators. The high prevalence of accidental and violent deaths (including suicide, homicide and family violence) found among Indigenous communities, can be attributed to both social and economic factors (12). This assumption is consistent with general findings in suicidology that report an increased risk of suicidal behaviour among individuals from socially disadvantaged backgrounds characterized by features such as low socio-economic status and income, limited educational achievement and poverty (e.g., 13). When gaining an understanding of suicidal behaviour among Indigenous peoples, it is necessary to have knowledge of the historical and cultural context in which the problems take place (14).

One of the proposed underlying causes for the increased suicide rates among Indigenous peoples is “the enormous social and cultural turmoil created by the policies of colonialism and the difficulties faced ever since by indigenous peoples in adjusting and inte-

grating into the modern-day societies” (15). No Indigenous settings are unaffected by the rapid social changes due to colonization and modernization (13). In this process of change, many Indigenous peoples lost their roots, their beliefs and their value systems very quickly (16). The situation found among Indigenous communities is in accordance with Durkheim’s classic theory which proposes that anomic suicide increases during periods of social change (17). According to Durkheim’s theory, anomie refers to situations where changes take place too fast, leading to the rejection of existing norms before new norms are generally accepted and internalized (18).

Historical and structural factors have important implications for the present socio-economic status and living conditions among Indigenous peoples. These circumstances will accordingly generate diverse health conditions and socio-pathologies among Indigenous communities, which could subsequently influence their respective suicide rates. In this respect, suicide can be considered an indicator of distress among Indigenous populations (19). Although the assimilation policy towards the Sami in Norway has been strong, their socio-economic status and living conditions have been considerably different from the situation found among several other Indigenous groups. Although, the socio-economic status in most Sami areas is at the lowest national level with regard to income, educational level and employment, the gap in living conditions between Sami and their majority population residing in Northern Norway decreased following the Second World War. During the last 3 decades, a process of integration and increased cultural revival has gradually replaced a history of

forced assimilation and colonization among Sami in Norway (20). Moreover, the outcome of the acculturation and the ethnic revitalization processes has varied in different regions inhabited by Sami. Generally speaking, the Sami have, to a greater extent, achieved cultural equality and are less socially disadvantaged when compared to other Indigenous groups. According to the relatively few studies on the health situation among the Sami population, there is so far no evidence of a more disadvantaged health status. Compared to the majority population, studies have shown less alcohol use among Sami adults and adolescents (21-23) and similar rates of mental health problems, smoking and sexual risk-taking behaviour for adolescents (22,24,5). This pattern differs with that for several other Indigenous populations worldwide. Generally, the Sami in Norway have had the opportunity to experience cultural continuity and have now also received a relatively high degree of local social and political control compared to other Indigenous groups living on reservations or, even worse, still experiencing genocide.

Also, some methodological limitations need to be mentioned. First, an important consideration in these studies is the classification of Sami ethnicity. In Study I, a combination of objective (ethnic ancestry and language competence) and subjective criteria (ethnic self-identification) were used. However, in Study II, objective criteria without ethnic self-identification were used. The categorization used in these studies can be considered to be broad and unspecific. Consequently, a broad definition will result in a sample of “Sami” which vary from mono-ethnic Sami to almost Norwegian Sami. This

may have serious implications for our results (e.g., type II error). For example, a broad definition may result in misclassification and subsequently reduce the differences between the groups making them almost identical. Another serious limitation in Study I is that the outcome variable was lifetime prevalence of suicide attempt, measured by the question "Have you ever tried to attempt suicide?" Since the response categories were "yes" and "no," there is no concrete information about the reported attempts. This is a serious limitation influencing the internal validity (information bias) of the outcome variable in Study II. Furthermore, another serious limitation is the lack of information concerning the actual intent of those attempting suicide (e.g., to die, seek attention, reduce pain) and the extent of the harm done in the attempt.

Conclusions

Sami in northern Norway appear to have a moderate prevalence of suicidal behaviour compared to several other Indigenous peoples residing in circumpolar areas. Ethnic differences in suicide rates may stem from variations in the exposure to risk and protective factors between the groups under study, or in the availability of protective factors, or the pattern of responses to either (25). The increased risk of suicidal behaviour among Indigenous peoples can, to some extent, be explained by the high prevalence of general risk factors, such as substance use, mental health problems, sexual abuse and family violence. It appears that the high rates of suicidal behaviour among Indigenous peoples may be an expression of the accumulation of risk factors across a variety of domains, rather than a single all-important determining

factor. High suicide rates among Indigenous communities can be explained by factors such as adverse socio-economic and living conditions, which contribute to a higher prevalence of risk factors. Conversely, the moderate prevalence of suicide attempts and suicide mortality found among Sami in northern Norway may to some extent be explained by cultural continuity and less disadvantaged socio-economic circumstances, which contribute to a lower prevalence of risk factors.

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