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HEALTH AND PHYSICAL WELLBEING OF THE SÁMI PEOPLE
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Introduction
The first attempt to create a global overview of Indigenous peoples' health and wellbeing against benchmark populations was undertaken by Anderson et al. (2016). A total of twenty-eight Indigenous populations in twenty-three countries were studied, with infant mortality, maternal mortality, high or low birthweight, obesity and life expectancy among the health indicators measured, alongside educational attainment, relative poverty and unemployment rates; the aim was to understand social outcomes. The overall conclusion of the study stated that Indigenous peoples’ health and social outcomes were poorer than those of non-Indigenous peoples living in the same country.

There were, however, two Indigenous peoples that had almost the same outcomes as the majority benchmark populations – the Sámi people of Scandinavia and the Mon of Myanmar. In Norway for example, Sámi life-expectancy was 1.6 years shorter than the benchmark non-Sámi population, while in Sweden Sámi life-expectancy was approximately 0.3 years shorter than non-Sámi. However, Anderson et al. (2016) emphasized that the Swedish numbers were built on geographical proxies not individual-level data, further stressing that “we have concerns about the accuracy of this [Sweden’s] picture of Sámi health status, in view of reports due to suicide, accident and injury” (p. 22). Sámi people in Finland and Russia were not included in the study as data were unavailable (Anderson et al., 2016).

The uncertainty of reliable official statistics is one of the recurring themes in the literature pertaining to Sámi health and demography over the past century. This has been addressed by several reports and studies (Axelsson, 2015; AHDR-II, 2014; Madden et al., 2016). The Centre for Sámi Health Research at the University of Tromsø in Arctic Norway is responsible for a large population-based study of the health and living conditions in areas with mixed Sámi and non-Sámi populations (the SAMINOR study). This study has been conducted twice (2003–04 and 2012–14) and has been crucial in measuring the health status of participants and establishing preventive measures to combat lifestyle diseases (Lund et al., 2007; Brustad et al., 2014). Unfortunately, this important Sámi-led contribution to our understanding of Sámi health is unique in Scandinavia. As the Sámi People’s traditional lands – Sápmi – extend into four countries (Norway, Sweden, Finland and the Kola Peninsula of Russia; Figure 3.1), presenting a
coherent picture of the health and wellbeing of the only recognized Indigenous people in the north of Europe is challenging to say the least, and in many cases impossible.

Given this, the current chapter will outline the health and physical wellbeing of the Sámi people living in Sápmi. Knowing that the effects of colonization are crucial for an understanding of the present-day health and wellbeing status of the Sámi people, we begin by outlining the historical background to the present situation.

**History and health**

The Sámi have lived in northern Fennoscandia since time immemorial. They were hunters and gatherers, but coinciding with external colonial pressure, full-scale reindeer husbandry developed in the early seventeenth century. The Sámi economy has long been tied to a specific form of social organization: the *siida*. Even though it is not believed that these institutions developed simultaneously in all areas of Sápmi, and even though researchers do not agree about the collective character of the *siida*, it is understood that they played a decisive role in resource management and the regulation of relationships between individual households. Within the *siida*, distribution of resource areas was decided and the common use of wild reindeer, fish and beaver was established. Family rights to hunting and fishing sites were passed down the generations, and confirmed by the *siida*, which also negotiated with other groups concerning the use of the wider land system (Sara, 2009; Brännlund & Axelsson, 2013). From the sixteenth and seventeenth centuries onwards, the Sámi people began to be Christianized by the Orthodox church in the eastern part of their traditional lands, while the Lutheran church forced many Sámi to abandon their traditional religion in what later became Finland, Norway and Sweden. Alongside Christianization, the state introduced taxes from the early seventeenth century; these, the Sámi paid collectively. Alongside the building of churches, courts were also established in

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**Figure 3.1** Map of Sápmi (with credit to Isabelle Brännlund)
the north. It is recognized that up until the early nineteenth century, Sámi land rights were legally protected in court decisions, but a more repressive state policy replaced the Sámi traditional division and use of land with a national administrative system. In Sweden particularly, the state partitioning of land (avvittringen) was a process in which the state claimed ownership of the land and ‘gave’ Sámi rights to use their traditional land for reindeer herding. This had detrimental impacts on Sámi society. Sámi rights were enacted through customary law with little resonance in other parts of state legislation and traditional Sámi ways of living were not taken into account (Lundmark, 2006; Allard, 2006). Rights to fishing, hunting and forestry on what had become Crown land became tied to how the state defined reindeer herding, which ultimately affected a large group of Sámi people. Sámi who did not fit the Swedish state’s description of a reindeer herder lost their right to use their traditional lands and waters (Lantto & Mörkenstam, 2008). Adding to this, from the late nineteenth and into the early part of the twentieth century there was a growing focus on the ‘purity’ of races and the Swedish state set up the world’s first institute for racial biology in 1922 in Uppsala, Sweden. Their main focus was on the ‘degeneration’ of races. They regarded the Sámi as a ‘primitive race’ that would soon succumb to the influence of ‘civilization’. Meanwhile state officials thought that the Sámi needed protection and as reindeer herding was seen as the livelihood most fit for the Sámi, protecting reindeer herding was considered to equate to protection of the state-defined Sámi people.

In Norway, Sámi were exposed to profound state assimilation – Norwegianization – that justified paternalistic policies and laws in which Sámi were not permitted to speak their native language. The Sámi on the Russian Kola peninsula have been strongly influenced by the administration of Russia and the Soviet Union. For instance, as a group they were, in the 1950s and 1960s, forced to move to live in Lovozero (Sergejeva, 2000). As in Sweden and Norway, the Sámi people in Finland were forced to learn Finnish in school and their culture was repressed (Juutilainen et al., 2014; Lehtola, 2015).

During the second half of the nineteenth century, in many traditional areas, the Sámi went from being a majority population to being a minority (Figure 3.2). This occurred around the 1870s in Sámi core areas such as Gällivare and Jukkasjärvi in Sweden.

A strong political Sámi movement began in the early twentieth century, which led to the Sámi in Norway, Finland and Sweden being acknowledged as the original inhabitants of northern Scandinavia. In addition, a National Sámi Parliament was established in each of these three countries. In Russia (since 2010), a Kola Sámi Assembly, modeled after the Scandinavian parliaments, was established. However, this assembly is yet to be recognized by the Russian government.

The Sámi people have also long been actively engaged in the international Indigenous political arena and were a core part of the first step towards what is now the United Nations Permanent Forum for Indigenous Issues. The Sámi further strengthened their identity as a people with the introduction of the Sámi flag (in 1986) and use of the Sámi anthem (first used on 6 February 1993 – Sámi National Day – celebrating the first Sámi congress in Tráante/Trondheim in 1917). The United Nations Declaration on the Rights of Indigenous Peoples, was signed by Finland, Sweden and Norway in 2007, while the Russian Federation abstained from voting and has yet to sign (Rohr, 2014).

Depending on terms and definitions, there are three different Sámi languages (East Sámi, Central Sámi and South Sámi) and within these languages there are nine Sámi language dialects (or varieties) spoken today; six of them are written languages. In Norway, Finland and Sweden, Sámi languages are protected by language acts, but Russia has not conferred official status on the Sámi languages (Svonni, 1998).

The latest official count of the Sámi population took place in the 2002 Russian census, when a total of 1,991 Sámi people were listed as residing on the Kola Peninsula. In Norway, Sweden and
Finland there is a lack of demographic data on Sámi identity in official statistics. Consequently, we do not have an accurate estimate of the number of Sámi people living in traditional Sámi areas. Estimates, however, of the number of Sámi people range from 80,000 to 140,000, with the majority of Sámi living in the northern part of the four countries (Axelsson, 2015).

Current health issues and physical wellbeing in Sápmi

During the eighteenth and nineteenth centuries, deaths due to accidents in the cold climate, drowning and complicated childbirths were reported more commonly among Sámi than among the non-Sámi population. Infant and childhood mortality rates were often three times higher among the Sámi compared with the non-Sámi population in the same area. This affected crude mortality rates, indicating that Sámi life expectancy was considerably shorter. However, the period of risk was childhood, and when the Sámi reached adulthood, their life expectancy often exceeded that of the non-Sámi settlers.

Today we have a picture showing more similarities than differences in mortality between the Sámi and non-Sámi populations in the traditional Sápmi area (Hassler et al., 2005; Tynes & Haldorsen, 2007; Soininen & Pukkola, 2008; Brustad et al., 2009). However, as stated in the introduction, one of the major challenges is being able to monitor the general health trends in Sápmi. This is due to laws around data registers, which forbid ethnic identification, thus rendering official statistics useless as regards to understanding health and living conditions in Sápmi. Health surveys are consequently few and far between. Efforts such as the Survey of Living Conditions in the Arctic (SLiCA) (Poppel, 2015) study and the Arctic Human Development Report (AHDR) (Nordic Council of Ministers, 2014) can only highlight the vast gap in

Figure 3.2 Population trends in Gällivare, 1776–1895
Source: Demographic Data Base, Gällivare parish.
knowledge relating to this area. One rare example of a successful health investigation, however, is the SAMINOR study. The study is led by the Sámi Center for Health research at the Arctic University of Norway (UIT). The SAMINOR is both a questionnaire and a clinical study and has run twice (2003–04 and 2012–14) in selected municipalities in the traditional Sámi area of Norway. The SAMINOR study has mainly focused on adults (+18 years) and the clinical studies in the last SAMINOR involved individuals 40–79 years of age. Participants self-identify their ethnic affiliations and answer questions regarding, for example, psychosocial health, discrimination and trust in healthcare systems. The 2012–14 study involved 11,600 participants and the 2003–04 version 16,865 participants. This is a very valuable health survey for understanding some of the current health issues in Norwegian Sápmi.

Based on the literature we find that mortality in the Sámi population of north Norway between 1970 and 1998 was slightly higher in total compared to the non-Sámi in the same area. This is in accordance with more recent findings from the SAMINOR study based on data from 2013 (Tynes & Haldorsen, 2007; Anderson et al., 2016). Certain causes of death exhibited a higher standardized mortality rate (SMR) in Sámi populations; these included cerebrovascular disease and violent deaths. However, mortality from malignant neoplasms and chronic liver disease were lower among Sámi than in the reference population (Tynes & Haldorsen, 2007).

Studies conducted in Sweden, where data ended in the year 2000, reveal that differences in mortality and life expectancy between the Sámi and a reference population were small. Sámi men had a lower SMR for cancer but a higher SMR for injuries with external causes. Among Sámi women, higher SMRs for diseases of the circulatory and respiratory systems were found (Hassler et al., 2005). An increased risk of dying from subarachnoid hemorrhage was also reported among both Sámi men and women. Life expectancy at birth was 74.9 years for Sámi men and 80.0 years for Sámi women. The most common causes of death were diseases of the circulatory system, followed by cancer and injuries with external causes. Accidents related to vehicles were reported as common causes of unnatural deaths among reindeer-herding Sámi families in Sweden between 1961 and 2001: road traffic accidents contributed to 16 percent of deaths and 11 percent were due to snowmobile fatalities. Half of the victims were involved in alcohol-related incidents. Suicides accounted for 23 percent of deaths (Ahlm et al., 2010). Deaths caused by vehicle accidents were also common in Finland. Suicide mortality among Sámi men was elevated compared to non-Sámi men. However, lower disease-related mortality among Sámi men compared to the general population in Finland was observed, attributable to the low mortality from cancer but possibly also related to diet, physical activity and genetics (Soininen & Pukkola, 2008).

Cancer

Cancer is one of the diseases that has been thoroughly studied in the Sámi population. A major reason for this interest was the fear of increased cancer risk due to nuclear fallout contamination in areas within Sápmi as a result of the Chernobyl nuclear reactor accident in 1986, and also from nuclear weapons testing on the island of Novaya Zemlya in the 1950s and 1960s. Studies from Norway, Sweden and Finland reveal a generally lower risk of cancer for Sámi than for non-Sámi people living in the same regions. However, cancers of the stomach in these regions are more prevalent than the national average. In all countries, Sámi show a lower risk of prostate cancer (Hassler et al., 2008b). In Sweden, the risk of stomach cancer in Sámi men and for cancers of the stomach and ovaries among Sámi women seemed to be higher than for the non-Sámi population. In addition, lower risks of cancer of the colon (this is also true for Norway), malignant melanoma and non-Hodgkin lymphoma were found among Sámi men in Sweden.
Among Sámi women in Sweden, a lower risk of bladder cancer has been reported (Hassler et al., 2008a; Haldorsen & Tynes, 2005). Significantly lower standardized incidence ratios for bladder cancer were reported for Sámi men in both Finland and Norway. In Finland, breast cancer was less common among Sámi than non-Sámi people. To date, no detectable excess of the radiation-sensitive cancers such as leukemia and thyroid cancer has been observed in either of the countries (Hassler et al., 2008b).

In conclusion, reports indicate a low risk in developing and dying from cancer among Sámi people. Suggested explanations for the low cancer risk are factors related to traditional Sámi lifestyle, such as dietary components (high intake of antioxidants and unsaturated fatty acids) and high levels of physical activity that may be protective factors from developing cancer. Genetic factors have also been suggested as an explanation for the lower risk of developing cancer.

**Cardiovascular diseases**

In Sweden, only small differences between Sámi and non-Sámi people with respect to the risk of developing cardiovascular diseases have been reported. The differences in risk factors are mostly related to working conditions and lifestyle factors associated with reindeer herding, lower blood pressure, higher job demands and physically active lifestyles. Higher incidences of stroke and subarachnoid hemorrhage (SAH) for Sámi men and women compared to a non-Sámi control population were found, but there was no increase in the risk of acute myocardial infarction (AMI) (Sjölander et al., 2008a; Edin-Liljegren et al., 2004). In Norway, marginalized Sámi living in areas dominated by non-Sámi people were more likely to report CVD than non-marginalized Sámi living in Sámi majority areas. No gender differences were found. The exposure to chronic stress following marginalization has been suggested as a plausible explanation (Eliassen et al., 2013). The prevalence of self-reported myocardial infarction is similar between Sámi and non-Sámi people in rural areas in Norway (Eliassen et al., 2015). Similar living conditions and close interactions between ethnic groups have been suggested as plausible explanations. Self-reported angina pectoris, on the other hand, was found to be more prevalent in Sámi compared to non-Sámi people (Eliassen et al., 2014).

**Other somatic diseases**

Metabolic syndrome refers to a cluster of risk factors associated with adverse health effects, for example cardiovascular disease or type 2 diabetes mellitus. Results from the SAMINOR study show a high prevalence of metabolic syndrome in both Sámi and non-Sámi populations and no ethnic differences were found in the prevalence of diabetes mellitus (c. 5%); however, ethnicity seemed to affect treatment. A combined treatment involving insulin and tablets was used more frequently among Sámi men than among non-Sámi men, and treatment with tablets was more commonly used among Sámi women than among non-Sámi women (Broderstad & Melhus, 2016). Nasratabifrouei et al. (2016) found that pre-diabetes was reported by 2.8 percent and that the prevalence for both diabetes and pre-diabetes increased with age. They did not observe any ethnic differences.

Multiple sclerosis (MS) occurs among 100/10^5 inhabitants in northern Europe, and among Norwegians the prevalence is in the range 73–164/10^5 inhabitants. A low prevalence of MS among Sámi in Norway has been reported, but there are no data on MS prevalence among Sámi in Finland, Sweden or Russia. However, prevalence estimates of MS from the general population in Sweden and Finland are in the same range as in Norway; estimates from Russia are somewhat lower. It has been suggested that a low frequency of the MS-associated haplotype
is related to the low prevalence among Sámi, together with other reduced genetic and environmental risk factors associated with the disease (Harbo et al., 2007).

In a study from northern Norway an association between Sámi ethnicity and asthma and allergy among schoolchildren has been found. Asthma and allergies are more prevalent among schoolchildren (7–13 years of age) from a Sámi origin compared to non-Sámi children of the same age and in the same geographic area. A greater increase in the cumulative incidence of asthma and allergy prevalence among Sámi children was also found over a ten-year period (Selnes et al., 1999; Selnes et al., 2002).

**Musculoskeletal disorders**

Chronic pain conditions are common in the general population. Around 20 percent of the European population suffers from chronic pain (Breivik et al., 2006). Markedly higher prevalences of musculoskeletal pain have been reported among 15–16-year-old adolescents Sámi in Norway (Table 3.1). No differences in the prevalence of musculoskeletal pain between Sámi and non-Sámi young people were found. The most common causes of pain in the orofacial area are temporomandibular disorders (TMD), which exhibit comorbidity with other pain symptoms such as headache and neck/shoulder pain (Storm & Wänman, 2006). High prevalences have been found among adult Sámi women in Sweden.

A strong association was found between musculoskeletal pain sites and psychosocial problems and studies have also linked childhood violence to chronic pain in adulthood. In the first study comparing Indigenous and non-Indigenous populations (based on the SAMINOR study) chest and stomach pain were more frequently reported by Sámi men than non-Sámi men. Sámi women reported stomach and pelvic pain more frequently than non-Sámi women (Eckoff & Kvernmo, 2014; Eriksen et al., 2016). Musculoskeletal symptoms are also reported to be common in reindeer-herding families in Sweden (Sjölander et al., 2008b). No current studies on musculoskeletal disorders among Sámi are available from either Finland or Russia.

**Discussion**

Sjölander (2011) stated in his review of Sámi health that “[i]n comparison with other Indigenous people in the circumpolar region, the health and living conditions are exceptionally good” (p. 9). He also, however, pointed out the general population’s lack of knowledge about Sámi people and understanding of Sámi issues, which creates marginalization. This chapter illustrates a rather fragmented picture of Sámi health. Since Sjölander’s study, three reports including references
to Sámi health and wellbeing have been published. The AHDR-II (2014) and SLiCA** study (Poppel, 2015) show differences in health and mortality between the four countries where Sámi people live. In Russia, the decrease in mortality rates did not start until the 1960s, and infant mortality rates are still considerably higher than in the Scandinavian countries. On the other hand, the Sámi of the Murmansk region have the highest life expectancy of all Indigenous peoples of Arctic Russia. Norway, Sweden and Finland share a more consistent picture of health where life expectancies are among the best in the world.

Our chapter reveals that at present there are no or very minor differences in life expectancy between Sámi and non-Sámi people in the northern region. The specific causes of death are also similar. The similarities between the Sámi and non-Sámi are probably due to centuries of close interaction and equal access to healthcare services and the social security system. The Lancet-Lowitja Institute global collaboration (Anderson et al., 2016) highlighted that Sámi people are, in general, living longer and healthier lives than most other Indigenous people worldwide.

Nevertheless, there are pronounced challenges and threats to Sámi people and their health. In recent years there have been increasing reports of suicide, depression and anxiety among young Sámi reindeer herders; these are rooted in a complex web of factors connected with ongoing colonization, cumulative effects of resource exploitation, climate and conflicts with the majority society (Stoor, 2016). These health disparities are difficult to examine further due to the fact Sámi people are not recognized in official statistics. This means that Norway, Finland and Sweden lack a system that continuously documents, analyzes and provides information to ensure that the countries are delivering services to ensure the health and wellbeing of Sámi society. This has hampered studies such as SLiCA (Poppel, 2015) and The Lancet-Lowitja Institute global collaboration (Anderson et al., 2016) and means that Finland and Sweden have been unable to undertake robust research. Furthermore, it is difficult to make comparisons between different studies, regions and countries because Sámi people are defined differently (Pettersen & Brustad, 2013).

Despite signing the UNDRIP and other international declarations, the Nordic countries lack a long-term strategy and commitment for supporting Sámi health research. As previously mentioned, Norway with its SAMINOR study is unique in the four countries where Sámi people live, but is also dependent on securing project funding to ensure that future studies can be carried out. It is also Norway that leads discussions on ethical guidelines for Sámi health research, which are important in further supporting relevant research in the field (Stordahl et al., 2015).

One of the future challenges for Sámi health, as well as Indigenous health generally, is connected to understanding the effects of colonization on the people affected. Colonization is a process that is considered to be the ‘cause of the causes’ explaining why Indigenous peoples experience worse health than non-Indigenous populations. Colonization is often poorly articulated in health research (King et al., 2009; Axelsson, Kukutai, & Kippen, 2016). In Finland, Juutilainen et al. (2014) suggest intergenerational effects of the repression of language and culture, but the effects on morbidity and mortality have yet to be addressed. Finally, we can conclude that, at present, most studies regarding health and wellbeing among Sámi originate from Norway. Knowledge gaps are extensive, particularly in Finland and Russia.

References
Physical wellbeing of the Sámi people


