

Human Health and Problem of Sustainable Development in the Arctic

E. Piterskaya & V. Kharitonova, Center of Medical Anthropology, Institute of Ethnology and Anthropology, Russian Academy of Sciences, Moscow; Russia

For almost two centuries the circumpolar north has attracted the attention of governments and commercial enterprises due to its rich mineral deposits – mainly metallic minerals and energy resources (oil, gas, coal). Only during the last decades has industrial development of the Arctic started to draw much attention in terms of its consequences for people living in this area, including aboriginal populations. The development of oil and gas fields and extensive mining activity in the Arctic lead to significant transformations in all spheres of human life including changes in environmental conditions, demographic situations, nutrition patterns and human health.

In this paper I will try to define the level of influence of external factors on human health during most crucial periods in the history of exploration of Arctic natural resources and provide an overview of the current situation in the Russian health care system in the North.

The majority of natural resources necessary for the economic development of Russia are concentrated in the North. The Russian Arctic and Sub-Arctic regions generate about 20% of the country's GDP, more than 90% of natural gas production, 75% of oil, 45% of coal, 80% of gold, 90% of copper and nickel, and almost all diamond production volumes. All the largest mining complexes are located in Northern areas of Russia.

Considering this vast exploitation activity the health of aboriginal populations of Arctic areas today raises more and more significant concerns. The total number of indigenous populations in Russia in their traditional living areas constitute less than a 176 thousand people from the whole of 244 thousand of all aboriginal populations of Russia (according to the 2002 census).

The World Health Organization defines health as a state of physical, mental and social well being and not just the absence of diseases or physical disorders (World Health Organization, 1948), but in medical and sanitary practice the notion of “health” has a much deeper connotation and includes the absence of diseases on an individual level as well as the process of decreasing diseases, deaths and health disorders in entire communities. This understanding of health will be used in the present paper.

According to a wide range of written, archaeological and folklore sources traditional medicine among the aboriginal people of the Russian Arctic included herbs, use of hot and cold water springs, massage and blood depletion. Shamanism as an integral part of traditional culture helped to keep psychological balance in the communities.

Appearance of Russian merchants in the first half of XIX century promoted the fur trade and exchange of European goods, mainly sugar, tea and alcohol. During this period new diseases appeared including smallpox, tuberculosis, etc.

Under the climatic conditions and severe natural environment aboriginal people of the Arctic developed a sophisticated, adaptive complex of physiological, biochemical and hormonal features that has remained with them through the centuries, to this day. During the first years of the introduction of a Soviet health care system in Arctic regions these factors were neglected and the main focus shifted towards struggling with infections. Change of life patterns led to changes in the structure of diseases among the aboriginal communities. Diseases peculiar to “civilized” societies (non-infectious pathology) appeared among indigenous peoples including obesity, arterial hypertonia, atherosclerosis, diabetes and coronary heart diseases. The core of preventive measures and treatment of such diseases was the ‘normalization’ of key physiological parameters, though most of them were tuned to people of moderate climate zones, not for Arctic inhabitants. To adjust contemporary medical programs to indigenous people, doctors and medical anthropologists should conduct deep research and define unified criteria for human health evaluation in Arctic regions.

By the end of the Soviet period the health concept among people in the Russian Arctic was connected with official medical services system that provided doctors and medical centers in almost all large towns and settlements in the North. It was rather difficult to get medical assistance in remote areas due to great distances from main settlements, poor technological availability and a lack of professional doctors. Traditional medical resources (healing) were prohibited. Official health and hygiene policy focused on extermination of prejudice and superstitious beliefs related to health. Dissemination of knowledge on hygiene and preventive medical measures was by far the most successful undertaking of the Soviet medicare system.

A focus on a “material” side of human health knowledge and healthy lifestyle resulted in failure in the psychotherapeutic sphere. A prohibition of traditional religious, magic and medical rites and practices which in Arctic regions were connected with shamanism and shaman healing to a major extent, contributed to the elimination of knowledge of traditional medicine, traditional nutrition patterns and health care knowledge, etc.

Total neglect of traditional aboriginal beliefs and lifestyle was a common feature for members of numerous prospecting and mining parties who came to the Arctic regions in order to explore and develop its enormous mineral resources in the early XX century. Geologists, workers and other specialists of European origin brought their vision of “civilization” along with European diseases and medicine. An increasingly expanding “European” presence and lifestyle accelerated the destruction of aboriginal culture with its traditional psychotherapeutic mechanisms that were vitally important for all members of traditional Arctic communities. Abandonment of traditional lifestyles and worldviews, as well as an inability to match the professional requests of the new economy led to the increase of “European” diseases as well as wide spread alcohol and drug addictions, suicides and a poor demographic situation throughout the Arctic .

During the transformation period (perestroika) the number of doctors and other medical staff decreased, the majority of regional hospitals and polyclinics and women’s and children’s health centers were closed, the supply of necessary medicine and equipment almost stopped in some remote areas due to financial problems, created by regular breach of federal financial support. Earlier established medicare system continued to function at a very low efficiency rate. As for medical research in northern areas during late 1980s, early 1990s – there were several centers that tried to continue research among the aboriginal populations of northern areas even with minimal financing. Their main focus was health and its preservation among aboriginal and non-aboriginal populations of the north. One of these research centers was the Research Institute of Medical Problems of the North (Nadym, Yamalo-Nenets region) which explored the opportunity of bringing contemporary mobile medical stations to the remote settlements of indigenous communities. One of the key programs of this institute was ‘Comprehensive valuation of medical, social and cultural situation among the aboriginal peoples in relation to their environment’. They explored demographic issues, risk factors (smoking, heavy weight, hypertonic issues), the rate of emotional exposure to external factors, changed nutrition patterns and their influence on chronic non-infectious diseases. This research confirmed that in the areas of higher “European” exposure aboriginal people experienced diseases more peculiar to the European society like obesity, atherosclerosis, coronary heart disorders, and diabetes. Research confirmed a strong correlation between human health in northern aboriginal communities with their lifestyle, habitation area and nutrition patterns. Giving up traditional lifestyles and urbanization resulted in a negative psychosomatic and somatic state of indigenous people. Eighty percent of the population experienced a severe lack of vitamins and vitally important microelements (deficit of up to

60-90%) which was to a large extent connected to changes in lifestyles. In areas with less European influence and better preserved traditional lifestyles the number of above mentioned “European” diseases was significantly lower. Based on research in Taimir and Kolar peninsular in 1994-1995 V. Khasnulin and his colleagues also explored the level of influence of psycho emotional stress and anxiety among aboriginal people of the Russian North on the enhancement of sclerosis, immunodeficiency and metabolism disorders (Хаснулин и др.1999. С.77). Similar data was collected in Khanti-Mansijsk district.

Study of psycho mental aspects confirmed the idea that following a traditional style of life helped to avoid a number of stressful factors and thus considerably decrease the level of mental diseases. This research showed the necessity of developing a new approach for health preventive programs in the Russian Arctic – it should be methods that consider peculiarities of traditional life patterns, both material and spiritual, and efficiently combine them with health monitoring and health risk evaluation in the North.

The main health issues that aboriginal people in the Arctic face today are mainly the result of active industrial development. Its effects on health vary from region to region and are particularly severe for vulnerable people of northern communities such as “children, elderly, disabled people” (Weiss, 2008).

Main Health Problems in Northern Areas Today

Poor quality of medical services

During the Soviet period the system of medicare and medicaid in the Northern Regions was provided by official hospitals and licensed doctors. Due to remote locations, a lack of highly qualified personnel and poor availability of medical equipment, medical services were provided only to a limited number of people. Today the situation has changed slightly for the better in regions of successful mining activity; there are for instance new modern medical equipment, high standard clinics and perfectly trained doctors in Yamalo-Nenets and Khanty-Mansijsk region. It is a region of extensive resource mining and mutually beneficial cooperation between the regional administration and management of mining companies that allows Yamalo-Nenets and Khanti-Mansiisky autonomous regions to create acceptable conditions for human wellbeing. Quite a different situation can be observed in depressive (subsidized) regions and districts, e.g. Koryak and other regions where the local government failed to agree with mining corporations or where there is less intensive mining activity. In such areas a lack of federal financial support led to the closure of hospitals, a decrease of personnel and in the quality of medical services.

Change of nutritional patterns

Abandonment of traditional activities (hunting, reindeer herding and fishing) led to changes in nutritional patterns and a shift from the prodite diet to a “European” carbohydrate diet, thus decreasing the immune resistance of aboriginal populations. Children’s health is to a great extent affected by “European” food, including sugar, pasta, sweets, etc.

Alcoholism, drug addiction

Another result of European expansion to the northern areas of Russia in early 1990s was a demopolization of alcohol production and an uncontrolled trade of strong drinks. Increased levels of unemployment (on average 25-30%, in some areas up to 60%) and an inability to satisfy professional requirements of oil and gas enterprises led to the increase of alcohol addiction among aboriginal populations (Годовых, Соколенко, 2003 С.58). Usually official statistics regarding the alcohol issues in the Russian Arctic were lowered. During the 1990s the number of patients with alcohol addiction resulted in significantly increased psychiatric disorders (Годовых, Соколенко, 2003 С.59). Taking into account that female alcoholism is the most critical issue due to its vital effect on children, doctors and psychotherapists have raised concerns about the future of such communities. Research in Arctic regions in the last years, particularly in Chukotka, show a depressing situation in mental health, even among children. A study among primary school children in Anadyr showed a 47% prevalence of psycho emotional disorders. The majority of this group was of aboriginal origin (1,7 times higher than among non-aboriginal schoolchildren) (Годовых, Филатова, 2003. С. 102 - 107). Drastic social and economic changes caused the increase in neurotization and psychosomatic disorders (Годовых, Соколенко, 2003. С. 52). Today the rate of mental disorders in the Far East and especially in the Chukotka area is 3,5 times higher than in other regions of Russia. Among all disabled children in Chukotka psycho mental disorders are in second place after genetic anomalies and birth traumas.

Suicide

Today the problem of suicide in Northern and Siberian regions has by far become the main focus of medical experts. For a long time official suicide statistics were strictly protected from public access. Here we don’t speak about suicide as cultural phenomena peculiar to many Arctic and Sub-Arctic people (more on this issue see Батьянова, 1994, с. 390 – 411; Batianova, 2000, P. 150-163). The research focus of many experts included “hygiene suicide” (the killing of disabled elderly and severely ill people at their request, according to tradition)

and suicide as psycho diagnosis with a main shift to the study of suicide caused by alcohol and drug abuse. During the last decade experts from the Institute of Ethnology and Anthropology managed to explore the suicide phenomena from an interdisciplinary perspective, with the Russian Federal Center for Suicide Studies, Ethnopsychological laboratory of Khakass Research Institute of History and Literature, and several Russian and foreign experts.

The number of people who committed suicide considerably increased during the state transformation years, due to social and economic reasons as well as deep cultural and world view issues (disappearance of shamans - people able to control psycho emotional state of aboriginal communities). This aspect of suicide was discussed during the interdisciplinary symposium 'Ecology and traditional religious and magic knowledge' held in Moscow, Abakan and Kyzil on July 9 – 21, 2001, as well as during the congress 'Sacral through the eyes of the "lay" and "initiated"' (Proceedings of the interdisciplinary symposium 'Ecology and traditional religious and magic knowledge' and Proceedings of the international congress 'Sacral through the eyes of the "lay" and "initiated"').

Poor Ecological Environment

Exposure of aboriginal people to toxic substances via food increasingly draws significant attention to the problem of general pollution of the Russian Arctic. Industrial development of southern regions has an increasingly negative effect on ecosystems and human health in the Arctic; winds blowing from southern regions within which industrial facilities are operated tend to bring toxic substances that accumulate in the North (in water and soil). For instance, radio nuclides tend to accumulate in moss, the main food of reindeer which form the nutritional basis of aboriginal populations of the Russian North. Aboriginals whose nutrition patterns are based mainly on the consumption of marine mammals (whales, walruses) and reindeer meat are much more exposed to the influence of toxic pollutants than people in other regions. Toxic substances contained in blood along with heavy metals cause drastic changes in human health, particularly in immune status, endocrine and reproduction systems, while hormonal disorders can cause tumors. At the same time it is impossible to reduce the amount of traditional food consumed by the communities because it is an extremely important leverage for the preservation of social, spiritual and cultural life of indigenous communities which directly effects human health (both physical and mental). Among aboriginal people on Chukotka Peninsula and Commander Islands concentration of highly toxic substances (lead, mercury) in blood considerably exceeds the level acceptable by the World Health

Organization and is by far the highest, not only in the Arctic, but among areas with poor ecological situations. The increased level of toxic substances, especially mercury, in the blood of pregnant women directly leads to disorders in menstruation, pregnancy and even immature delivery (Дударев, 2006).

Contemporary Research of Health Problems in the Russian Arctic

A poor health situation requires immediate attention of both the scientific community and policy makers. In Russia there are today several institutes and centers in Novosibirsk, Krasnoyarsk and Nadym that focus on the problem of health and health preservation among the people of the North and Siberia. Health problems in Chukotka are studied by the Scientific Research Center "Arctic" of the Far East Scientific Research Institute of Russian Academy of Sciences, as well as by the North East Complex Scientific Research Institute (Chukotka branch) which recently published a solid research devoted to health issues among indigenous children in Chukotka (Годовых, Годовых. 2006). In this book considerable attention is devoted to recommendations on how to overcome the negative situation in children's health preservation and health care with a main focus on ethnomedical aspects and health resort rehabilitation (use of mineral spring water and local herbs). Other books published recently by doctors and medical anthropologists include Kaznacheev V., Polyakov Ya. "Problems of 'XXI Century Sphinx': People Survival in Russia" (Казначеев, Поляков и др.2000), also Khasnulin V., Vilgelm V. et al., "Medical Anthropology of the Aboriginal Population in Northern Russia" (Хаснулин, Вильгельм и др. 1999). Ethnologists and cultural anthropologists also contribute to the studies of contemporary health problems by exploring the issues of folk medicine, shaman healing practices in indigenous communities, and attitudes to health and health concepts of different native groups.

Sustainable development of northern regions is impossible without a healthy northern society capable to meet the demands of modern economy. Today there are several major concerns in the aboriginal and non-aboriginal health care systems in the Russian Arctic that require special immediate attention of Arctic policy makers and medical experts. Health care systems vary greatly from region to region; in some Arctic areas, due to recent efforts of the Russian federal government and regional governmental authorities, new health care programs are being implemented - new hospitals appear, better conditions have been set for qualified doctors, better availability for the necessary medical drugs has been provided, special anti-alcohol programs (like in Taimir) are being introduced. Meanwhile the health care situation in other remote Arctic regions remains poor. Special purpose federal program 'Economic and

social development of small indigenous people of North and Siberia up to 2011' acts as the first mechanism aimed at struggling with health problems within native communities and implies the establishment of effective medical and sanitary services through the creation of well equipped mobile medical brigades for disease prevention, diagnostics and treatment on site.

After long years of consultations and a search of the correct way to deal with health problems of indigenous populations of the North the only approach that seems to be viable in contemporary society is consideration of traditional lifestyle, culture and knowledge of these peoples and integration of this knowledge into medical practices to make them more effective. Revival of traditions (rites, ritual food, magic and medical practices) even in modified form significantly contribute to the improvement of health in indigenous communities.

Medical and anthropological research should be accompanied by the significant psychological work to discover the current psychological status of aboriginal and non-aboriginal populations of the Russian Arctic. Such work is strongly required during development of special care programs that deal with depression, suicide, alcohol and drug addiction.

The Center of Medical Anthropology in the Institute of Ethnology and Anthropology Russian Academy of Sciences

One of the main research topics for our Center is human health and its preservation in the Russian North and Siberia in the contemporary social and ecological environment.

Our research focus includes:

- Study of contemporary situation in the field of health and health care among various aboriginal groups, including those living in the Russian North
- Study of traditional medical practices among these groups and their relations with official medicare and possible integration into contemporary medical practices.
- Integrative (complementary) medicine (including traditional and oriental)
- Healing practices
- Traditional and contemporary health restoration systems that involve psycho energetic and psycho mental aspects.

In 2006 the Center arranged an international summer school on Medical Anthropology in Moscow where the main discussion topic was aboriginal health (including issues of suicide and alcoholism) and hazards to human subsistence in the North.

In 2008 we plan to arrange a Second Summer School on Medical Anthropology to be held in Salekhard (Yamalo-Nenets Autonomous district). Medical anthropologists, doctors, healers, and other health specialists will be invited to discuss the issues of health and its preservation in severe ecological and economic conditions of the Arctic. Topics to be discussed during the Summer School are:

- Contemporary health preservation issues among aboriginal groups of the North and Siberia;
- Health of non-aboriginal groups of the North and Siberia;
- Peculiarities of children's health preservation in Northern and Siberian conditions;
- Alcohol and drug addiction, and suicide among people of the North and Siberia;
- The role and opportunities for contemporary and traditional psychotherapy (including magic and mystic practices, shamanism) in health improvement among people of the North and Siberia;
- Ethno medicine and the problem of integration of medical systems to create efficient methods for health improvement in the North and Siberia;
- "Success stories" – international experience of effective medical management and health improvement systems among aboriginal and non-aboriginal populations of Northern areas

References

- Batianova E. (2000). Ritual violence among the peoples of Northeastern Siberia // *Hunters and gatherers in the modern world: conflict, resistance, and self-determination*. P. 150-163.
- Proceedings of the interdisciplinary symposium «Ecology and traditional religious and magic knowledge» hold in Moscow, Abakan and Kyzil on July 9 – 21, 2001.* (2001). P. 210 - 225. Part 2. M.: IEA RAS.
- Proceedings of the international congress «Sacral through the eyes of the “lay” and “initiated”*, Moscow, June 21 – 30, 2004. (2004). P. 243 – 313. Part 1. M.: IEA RAS.
- Weiss L. (2008). Background paper on Human Health Consequences of Climate Change in the Circumpolar North. V Northern Research Forum, 24-27 September, Anchorage, Alaska.
- Батьянова Е.П. (1994). Некоторые архаические обычаи народов Крайнего Северо-Востока *Народы Севера и Сибири в условиях экономических реформ и демократических преобразований*. М. с. 390 – 411.
- Годовых Т.В., Годовых В.В. (2006.) *Здоровье детей Чукотки*. Магадан.
- Годовых Т.В., Соколенко О.Е., Ленский Е.Л., Ленская Г.Г. Психическое здоровье населения Чукотки (2003). *Состояние здоровья населения Чукотки: проблемы и пути решения*. Магадан: ЧФ СВКНИИ ДВО РАН.
- Годовых Т.В., Филатова Е.А. Анализ психологических нарушений у детей Чукотки (на примере г. Анадыря) (2003). *Состояние здоровья населения Чукотки: проблемы и пути решения*. Магадан: ЧФ СВКНИИ ДВО РАН.
- Дударев А. А. (2006). *Основные закономерности и меры профилактики вредного воздействия стойких токсичных веществ на здоровье коренных жителей Российского Севера*. Автореферат диссертации на соискание ученой степени доктора медицинских наук, Санкт-Петербург.
- Казначеев В.П., Поляков Я.В., Акулов А.И., Мингазов И.Ф. (2000). *Проблемы «Сфинкса XXI века» Выживание населения России*. Новосибирск: Наука.
- Козлов А.И., Вершубская Г.Г. (1999). *Медицинская антропология коренного населения севера России*. Москва.
- Хаснулин В.И. (1994). *Концепция сохранения здоровья человека на Крайнем Севере*. Норильск.

Хаснулин В.И., Вильгельм В.Д., Скосырева Г.А., Поворознюк Е.П. (1999).
Современный взгляд на народную медицину Севера. Новосибирск: СО РАМН.