The health of elders: a comparison of communities across the Bering Strait

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ABSTRACT

Objective. Compare the self-reported health status of a cohort of 58+ individuals in sixteen communities on either side of the Bering Strait.

Study Design. Multi-method including formal surveys and ethnographic research.

Methods. Approximately 1,146 survey questionnaires were completed. A sample of 747 of these interviews were used for this analysis, of which 88 were 58+ years of age and 659 were adults 18-57.

Result. On all self reported measures of general health, chronic illness and depression, Russian elders reported higher rates of poor health than did their American congeners. However, the segment of the sample in most distress was Russian adults 18-57. Not one of these 361 individuals reported their health as "very good", while nearly a third reported poor health and chronic illness. In addition, about 2/3rds (compared to half the Russian elderly) reported a constellation of symptoms related to depression. Psychologically (using these measures) the most resilient cohort were Alaskan elders.

One result of this research that is of tremendous concern is the fact that over two thirds of the STN males, both Alaskan and Russian, under the age of 58 smoke. This is an extraordinary proportion and is easily double the rate for individuals of similar age within the U.S.

Conclusions. For Alaskan elderly, no other segment in the U.S. faces the level of difficulty in access to health services even though these services are incomparable by Russian standards. In addition, the extremely high levels of behavioral risk from smoking and other factors indicate substantial difficulties and increasing demand for health services in the near future. In comparison Russian elderly populations face almost unimaginable difficulties.

Keywords: elderly, health status, behavioral risk, Alaska and Russian Indigenous communities.

INTRODUCTION

The Social Transitions in the North (STN) project was funded by a grant from the National Science Foundation to investigate the health status of indigenous populations in the Russian Far East and Alaska. The intent of this paper is to compare, using a variety of measures, the health status of a population of elders 58+ living on both sides of the Bering Strait. The age cut off of 58+, rather than normal cut off levels of 65+ was chosen to insure a reasonable sample size on which to perform the analysis. In addition, a series of comparisons, both within and between regions, were made with a younger cohort of individuals 16-57.

METHODS

The STN project employed a variety of research techniques, including ethnographic inquiry. However, the main focus of this analysis will be the results from the survey research component. Over a thousand interviews and re-interviews (N=1146) were completed in sixteen communities in the re-
regions of Kamchatka, Chukotka, Northwest Alaska and the Aleutians. While these interviews and re-interviews were conducted in the period from 1993 to 1995 this paper will concentrate on the first wave of interviews. The first wave of interviews on both sides seem to contain the most complete and reliable data. Table I provides the sample size for each age cohort. The elderly cohort sample sizes are an issue of some concern.

### Table I. Sample Size

| Nation     | Individuals | Individuals | Total Sample Size |
|------------|-------------|-------------|------------------|
| United States | 55          | 298         | 353              |
| Russia     | 33          | 361         | 394              |

### The Sample and Issues of Representation

For a variety of reasons, including non-random samples, it will be difficult to generalize the results of this research to the regions in question. For example, as Figure 1 – Gender of Respondent by Age clearly demonstrates there is a skewing by gender at all age categories. For example, the STN sample for Alaska has a ratio of about 1:2 (Figure 1). That is for every male interviewed there were two females that were interviewed. However, if we look at the very reliable Department of Labor demographic information for the three Alaskan areas (Northwest Arctic Borough, Aleutians East and West), which contain the eight sample communities we find that the ratio of men to women 18+ is about 2:1 while the ratio of men to women in the 65+ category is about 1:1. Clearly the STN sample is skewed. Anecdotal information from the field researchers indicate that on the Alaska side some men were away and engaging in subsistence or commercial fishing activities during the interview period. In addition, it is asserted that a high proportion of the men who remained in the community on both sides were incapacitated and unavailable due to problem drinking. These assertions can raise grave concerns about the conclusions of this analysis. These assertions about the reason for sample bias need not be taken as authoritative, especially since survey research that was done in 2001 in the same Chukotkan communities, where conditions have become incomparably worse, managed to meet the requirements of random sampling with no skewing in the proportions by gender.

### RESULTS

Whatever, the reasons the skewing of the STN sample, especially as it under represents men, is of special concern. It is my intuition, based on over fifteen years research experience in Chukotka and Alaska, that the generalizations we make about the health of the study communities will underestimate the seriousness of the health problems for both sides of the Bering Strait. The recent dramatic decrease in the life expectancy of men throughout Russia is an especially sobering fact in this regard.

#### General Health

Table II, Alaska/Russia General Health by Age, contains considerable surprises. First, no elder in the Russian sample feels their health is "very good" while nearly a quarter of their Alaskan congeners are optimistic about their general health. Second, while a half of the "youngsters" in Alaska feel their health is "very good" only a miniscule 4%
of the Russians under 58 feel the same way. Conversely one in three Russian elders feels they are in poor health, with one in five of the younger generation being pessimistic about their health status. Almost no “non-elder” in Alaska feels they are in poor health while one in four elders are concerned about their health.

The gender differences in Alaska exhibit a bi-modal distribution. Almost all the reports of poor health are by women in all age categories but especially those between 40 and 57 years of age. In contrast the vast majority of those reporting “very good” health are women by a 3:1 margin. Obviously men are heavily loaded in the “adequate” health category for all ages.

In Russia the vast majority of individuals (by a proportion of nearly 4:1) reporting “poor” health are women at all age levels. In contrast to the Alaskan sample the small proportion of individuals reporting “very good” health is nearly equally divided between men and women at all age categories.

In summary, except for Alaskans’ under 58, by far the modal response for all communities is that people feel they have an “adequate” or reasonable level of general health. However, it is at the extremes that the largest contrasts apply. Based on a self assessment of their general health status (this measure when used in previous research has demonstrated substantial construct validity), almost no one in the Russian sample, at any age level, considers themselves to be in very good health. Significant portions of elders in all communities consider themselves to be in poor health. In general, Russian informants report themselves to be in poorer health. This obtains for all age categories, but especially for women.

Based on other studies, only about 3% of the adult population in Alaska (over the age of 18) self-reports their health as poor (1). This compares closely with the Alaska STN sample for individuals less than 58 years of age. The Alaska Behavioral Risk Factor Survey did not disaggregate by age so comparisons with the STN sample are not possible.

**Chronic Illness**

In some ways the measure of chronic illness mirrors the informant’s self assessment of health condition. It is interesting to note when a contradiction between the two measures occurs. In Russia, women now take on the bi-modal distribution characteristic of Alaska women. That is when compared to men a much higher proportion of women classify themselves as having a lot of chronic illnesses, while at the other extreme a much higher proportion of women of all ages (4:1 over men) report themselves to be free of chronic illness. In contrast women of all ages report “some” chronic illness at much higher rates when compared to men (4:1).

The same distributions occur for Alaskan women, where a small cohort of chronically ill women report at ratios of 4:1 over men. However, there is a much larger segment of women (8 times the size of the chronically ill cohort) who report themselves free of chronic illness.

The chart and table below graphically indicate that at all age intervals Alaskan informants are healthier, at least in the sense they report the absence of any chronic illness. Most astounding is the high rates of chronic illness exhibited by Russian informants below the age of 58.
Constraint on Physical Activity

Approximately three out of four Alaska informants, at all ages, said that during the last two weeks their physical activity had not been constrained by health problems. For the 25% of the respondents who do experience some physical constraints, women (but not female elders) tend to experience more difficulties than men.

For the Russian communities nearly two out of three respondents experienced no constraints on physical activity, although elders experience slightly more difficulty. There were no significant differences by gender at any age group on the Russian side.

Symptoms of Depression

The following section uses four measures from the STN survey to create a rough index of depression. Clearly there are problems in diagnosing depression using these measures (e.g., difficulty sleeping or sleeping too much are both indicators on depression inventories). Nevertheless the consistency of the findings gives some confidence to the construct validity of these measures.

When compared to Alaskan informants Russians of all ages are clearly more at risk for affective disorders. Nearly half the Russian population under the age of 58 has trouble sleeping, concentrating or experiences negative affect. One in three Russian elders clearly exhibits a constellation of symptoms indicative of depression.

The most resilient cohort appears to be Alaskan elders while young and middle aged individuals in Russia exhibit, across a variety of measures, a structure of morbidity that is of most serious concern.
Behavioral Risk Factors The STN project also included a number of behavioral risk measures in their questionnaire. Alcohol consumption and alcoholism present the most pressing behavioral problem; however, time constraints and the current organization of the data set prevent the careful consideration required of this sensitive problem. One measure in the study that seems relatively straight forward in its construct validity is the behavioral risk from smoking (see Table III). This measure also provides ready comparison with state-wide and national parameters obtained from the CDC’s Behavioral Risk Factor Surveillance System (BRFSS). Table IV (below) provides comparisons between the STN data and state and national prevalence data from 1995. The earliest year the BRFSS provides breakdowns that allow for direct comparison with the STN data.

Three things stand out from Tables III & IV. First, Alaska Natives and informants from the Russian STN sample smoke at rates far in excess of the average Alaskan or individual within the U.S. Secondly, and this is somewhat of a surprise, Alaskan Natives in the STN sample have a higher proportion of smokers than do Russian STN respondents. Thirdly, and this is of most concern, over two thirds of the STN males, both Alaskan and Russian, under the age of 58 smoke. This is an extraordinary proportion and is easily double the rate for individuals of similar age within the U.S. The STN sample has higher rates for Alaskan Natives when compared with the BRFSS samples. Although the Alaska Department of Health and Social Services, using BRFSS data, does report more than half the Alaska Native High School students smoke cigarettes.

For the elderly population (defined as 58+ for the STN sample) all their rates are lower than populations under 58 but are still very significant. Most disconcerting is the population most at risk, Russian males over 58, have the highest rate of smoking at 60%. Only Russian women over 58 years of age (17%) approach the U.S. national rates for smoking. About four out of ten STN respondents over the age of 58 smoke, while only 11% of the U.S. population over 65 smoke.

DISCUSSION

Bivariate and Multivariate Analysis Considerable work would be needed to achieve a formal multivariate analysis of health profiles for elders in the STN sample. Some hypotheses that might be interesting to test could include the relationship of traditional activities, e.g., amount of subsistence in diet and/or the use of Native language on the general health status of elders. A quick cursory analysis seems to indicate that the less subsistence food in the diet of elders in Alaska the more likely they are to self-report poorer health. In contrast, the amount of subsistence food in elders’ diets in Russia seems to have no statistically significant role in the reporting of their general health status.

Table III. Tobacco Use STN Sample.

| Social Transitions in the North Data Set | Alaska 58+ | Alaska <58 | Russia 58+ | Russia <58 |
|----------------------------------------|------------|------------|------------|------------|
| Smoke Tobacco                          | 41%        | 61%        | 30%        | 49%        |
| Smoke Tobacco Male                     | 44%        | 66%        | 60%        | 68%        |
| Smoke Tobacco Female                   | 36%        | 59%        | 17%        | 43%        |

Table IV. Comparison of Tobacco Use Alaska and the U.S.

| BRFSS Alaska/National Data Set 1995 | Do You Smoke Cigarettes Now? |
|-------------------------------------|--------------------------------|
| All Alaskans                        | 25% Yes 75% NO                 |
| All Americans Nationwide            | 22% Yes 78% NO                 |
| Alaskans White                      | 24% Yes 76% NO                 |
| Alaskans – Native (1993)*           | 43% No 57% Yes                 |
| Alaskans - 65+                      | 14% No 86% Yes                 |
| All Americans Nationwide            | 11% Yes 89% No                 |
| Alaskans - Male                     | 27% Yes 73% No                 |
| Alaskans - Female                   | 23% Yes 77% No                 |
| STN Dataset All Alaskan Respondents | 50% Yes 50% No                 |
| STN Dataset All Russian Respondents | 47% Yes 53% No                 |

*see Schumacher et al (1997:5)
Alaska

The Chronic Disease Prevention unit of the Center for Disease Control (CDC) report that for aging populations people with healthier lifestyles have half the risk for disability. The CDC defines a healthier lifestyle as one that includes exercise, the avoidance of tobacco and proper nutrition (2). The consequences of unhealthy lifestyles fall not just to the persons who make individual decisions about their health but to society as a whole. As the CDC reports:

Almost one-third of U.S. health care costs, or $300 billion each year, are for older adults. Not including the costs of inflation and new technology, health care spending will increase by 25% between 2000 and 2030 simply because a larger percentage of the population is older than 65 (3).

In Alaska, among Alaska Native populations, deaths are increasing from heart disease, stroke, cancer and diabetes. These increases are due in part to increased life expectancy and because of the increasing prevalence of health risk behaviors (4). Among Alaska Natives, smoking related deaths account for approximately 18% of all deaths and Alaska Native women have the highest cancer mortality rates of all U.S. women, largely because of high smoking rates (5).

As the Alaska Behavior Risk Factor Survey shows:

Alcohol is a major contributing factor in homicides, suicides and unintentional injuries. Alaska had the highest rate of injury death among states in the U.S. during the time period 1988-92 and the highest rates occurred in rural Alaska… among Alaska Natives alcohol is responsible for approximately 16% of all deaths (6).

Especially vulnerable are Alaska Natives in the age group 25-34 where the excess death and years of productive life lost among younger people are largely due to unintentional injury, suicide and homicide (7).

Russia

Between 1990 and 1994 life expectancy for Russian men declined from 63.8 years to 57.7 years, while Russian women experienced a decline from 74.4 to 71.2 years. As FC Notzon et al 1998 note:

More than 75% of the decline in life expectancy was due to increased mortality rates for ages 25 to 64 years…. Increases in cardiovascular mortality accounted for 41.6% of the decline in life expectancy for women and 33.4% for men, while increases in mortality from injuries (e.g., falls, occupational injuries, motor vehicle crashes, suicides, and homicides) accounted for 32.8% of the decline in life expectancy for men and 21.8% for women.

The authors conclude:

The striking rise in Russian mortality is beyond the peacetime experience of industrialized countries, with a five year decline in life expectancy in 4 years’ time. Many factors appear to be operating simultaneously, including economic and social instability, high rates of tobacco and alcohol consumption, poor nutrition, depression and deterioration of the health care system. Problems in data quality and reporting appear unable (emphasis added) to account for these findings. (8)

We have already mentioned the impacts of an aging population on health care costs in the U.S. Note that in Russian between 1959 and 1990 the number of persons aged 60 and over doubled. As a result, at the beginning of the 1990s, the proportion of the population aged 60 or over reached 16 percent. This figure will reach 20 percent by 2015 (8).

Very similar to the situation reported in Alaska, health statistics in Russia indicate that by 1994, mortality rates for males between ages 15 and 64 were about twice as high as they have been in 1986. DaVanzo et al (9) conclude for this population cohort that:

Rising alcoholism and … deaths from violence, injuries and other nonnatural causes have contributed heavily to the latest rise. Russia’s rates of homicide and suicide are among the highest in the world.

In addition:

Heavy tobacco use contributes to a high rate of mortality from lung cancer, which occurs 60 percent more frequently in Russia than in the United States (10).
CONCLUSION

Despite significant differences in income, nutrition, access to services and the quality of those services between communities on either side of the Bering Strait considerable concern should accrue to policy makers about the health status of indigenous people. On self reported measures of general health only young men and women in Alaska assess their health at proportions similar to the rest of the U.S. However, as we documented above, younger indigenous people in Alaska, especially those under 34 years of age, face tremendous risk from behavioral factors. For Russian the under 58 cohort, but especially men, face the same behavioral risk factors but at the same time experience high levels of chronic illness including depression.

This latter conclusion should in no way diminish the acute concern for Alaska and Russian Native elderly. For Alaska, no other population in the U.S. at this age cohort experiences similar levels of difficulty. Access to health services, while incomparable by Russian standards, lag behind the rest of the U.S. In addition, the extremely high levels of behavioral risk from smoking and other factors indicate substantial difficulties and increasing demand for health services in the near future. This demand, in a milieu of decreasing appropriations, bodes poorly for their health status. Russian elderly populations face almost unimaginable difficulties as the transition from poor services to no services is exacerbated by the current social and economic conditions of their country. While the transition to a market economy will bring some winners, the existing (and deteriorating) service and transportation infrastructure, coupled with their fixed incomes, is ominous. Of course changes in health require more than health personnel. The underlying social and economic conditions must also improve. I suspect, like parents everywhere, any alleviation of the pervading despair and denial faced by their children would be a first step embraced by all.

Acknowledgements

This work was supported, in part, by the National Science Foundation and the National Center for Research Resources funding to the Center for Alaska Native Health Research (Grant No. RR 16430).

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