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The first telephone-based health survey in Moscow: building a model for behavioral risk factor surveillance in Russia

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As part of an ongoing collaboration on the development of policies and strategies for the prevention of noncommunicable diseases (NCDs) between the Russian Center for Preventive Medicine (RCPM) and the Centers for Disease Control and Prevention (CDC), a needs assessment was conducted. One of the most important problems identified was the lack of local and national data on prevalence of behavioral risk factors. The surveillance system in place collected information only on facility-based treatment and health status, and only random and small-scale surveys of selected risk factors could be found (Tozhiev et al. 2000; Volkov et al. 1999). To begin to address this problem we developed and pilot tested a telephone-based behavioral risk factor survey (BRFSS) in Moscow. The Russian BRFSS was modeled after the US system which is coordinated by the CDC (BRFSS 2000). We also took advantage of experience in surveillance that existed in Russia through participation in the WHO Country-Wide Integrated Non-communicable Diseases Intervention program-CINDI (WHO 1996) and the Mega Country initiative (WHO 2003). The long-term goal is to establish a sustainable system for monitoring behavioral risk factors and use this data for decision making.

Questionnaires used in surveys in Russia and other countries including the BRFSS (BRFSS 2000), CINDI (WHO 1996), and the International Physical Activity Questionnaire-IPAQ (IPAQ 2003) were reviewed and potential items identified. The final version of the questionnaire included 151 questions in the following modules: demographics, health status, health care quality, fruit and vegetable consumption, smoking habit, levels of physical activity, self-reported levels of blood pressure and blood cholesterol, alcohol consumption, diabetes and cardio-vascular diseases (CVDs) and women's health, and required approximately 10–12 minutes per interview. A pre-test of 100 adults indicated that the questions were well understood and this group did not have difficulty in responding to them. A telephone-based survey was chosen because most households in Moscow have at least one telephone. From the 3200820 phone numbers on our list a pool of 3031 numbers was randomly selected, 19.5% of these were found to be ineligible, resulting in a total pool of 2440. Interviews were conducted by the RCPM staff and by volunteers who were given two 3-hour training sessions. Interviews were conducted with the person in each household who answered the phone, and only adults aged 25–64 years were eligible. Up to 10 telephone calls were made to a household at different times of the day. If those calls failed three more attempts were made one month later. About 50% of the eventual participants were reached on the first attempt, and 90% of interviews necessitated no more than four telephone calls.

There were 1693 interviews completed from the eligible pool of 2440, a response rate of 69.4%. 12% (290) of the sample was impossible to reach, and 19% (457) refused to be interviewed. The most common reasons for refusal were unwillingness to discuss health problems (45%) and lack of time (34%).

The age distribution was similar to the official city statistics for Moscow, however a disproportionate number of women responded to the survey (68%) compared to the general Moscow population which is 54.7% female. Respondents were also more highly educated; about 40% of Moscow residents 25–64 years old have a graduate degree compared with 52% of the men and 48% of the women in the survey (Goscomstat 2000).

Preliminary results show the relatively high level of behavioral risk factors in this sample with smoking (in men), low fruit and vegetable consumption, and overweight being the most prevalent risk factors (Tab. 1).

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Table 1 Sample size, mean age, years of education and prevalence of selected self-reported risk factors (%)

Behavioral risk factor	Men	Women
Total Number	542	1151
Average age	44.0	46.1
Average years of education	13.2	13.4
Current smoking[1]	61.1	26.9
Blood pressure >140/90 mm Hg[2]	35.8	34.8
controlled effectively[3]	6.5	17.7
Body mass index ≥ 25.0	50.6	51.9
Low fruit and vegetable consumption[4]	65.6	66.8
Alcohol consumption more than 20 g/day	35.3	2.6
Sedentary lifestyle[5]	23.1	21.8

[1] Those who have smoked at least 100 cigarettes and currently are smoking every day or sometime
[2] Ever been told by health professional that they have BP >140/90 mmHg
[3] Those who reported that they take treatment for hypertension and to have BP < 140/90 mmHg
[4] Less than 400 g of fruit and vegetables (not including potatoes) consumed daily
[5] Mainly sedentary at work and during leisure time and less than 60 min of daily walking

The results of this survey indicate that behavioral risk factor data can be collected in Russia using questions and methods similar to those used in Europe and the US. However, the validity and reliability of information provided by our respondents requires further investigation. Rates of smoking and hypertension are roughly comparable with other surveys (Kuulasmaa et al. 2000; Morgenstern et al. 1992) but the body mass index, especially for women may be an underestimate. In a 1990 CINDI survey of Moscow the prevalence of overweight or obesity for women was 62.6% and for men 56.7%. CINDI surveys conducted between 1988 and 1994 in other communities found prevalences of overweight or obesity ranging from 43% to 72.7% with rates for women from 6 to 20% higher than men (CINDI-Rus 1999; Schalnova 1999). Alcohol consumption may also be underreported: data reported in this survey translates to about 7.5 liters per capita consumption per year in men and 1.0 in women, about half of what is reported through other sources (Demin & Demina 1998; Nemtsov 2000).

The response rate was comparable with what has been found in Moscow for other interview methods (CINDI-Rus 1999), and neither respondents nor interviewers expressed significant difficulties in asking or responding to the questions. The quality of interviews by professional interviewers and trained volunteers was similar, but volunteers were more flexible in choosing times for an interview and thus had a better response rate (72.7% vs 65.9%) than RCPM employees. However, careful selection of people for this job is necessary. It was important to perform quality control and data entry immediately after interviews. Telephone-based interviews in Moscow proved to be a convenient method though efforts should be made in the future to insure that the survey sample is more representative. Our pre-test revealed that additional forms of randomization such as asking to interview the person in the household that has the next birthday were not feasible. The source of phone numbers that we were able to obtain did not provide adequate information to characterize non-respondents or reduce selection bias through stratification or other methods. In the future other sources of samples such as population registers, electoral lists, or medical insurance company lists, should be tested. It may be possible to increase representativeness thorough the use of initial screening questions but this will have to be balanced against the increased cost and decreased response rate. At present, only large Russian cities have a sufficiently high percentage of homes with telephones to make a telephone survey feasible; in many areas, mixed or modified methods will be required.

In this survey standard criteria were developed based on international recommendations for most of the risk factors (WHO 1999). Some items, such as the classification of categories and levels of physical activity require additional clarification (e. g., if walking to work or to do errands is included nearly all respondents meet recommended levels of physical activity).

Building on experience from this study 14 new Russian communities are conducting risk factor surveys using a mix of telephone and personal interview methods. The base of a national surveillance system is emerging. Russia has gone through tremendous changes over the last decade, and in many ways the public health system is poised to move into a more prominent and effective role in protecting the nation's health. Adequate behavioral data collected systematically and regularly, will be vital to this effort.

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