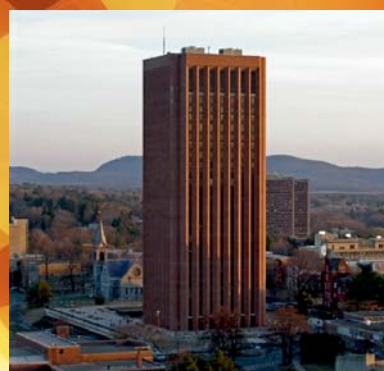




METHODS TO PREVENT COMMUNITY HEALTH PROBLEMS. RUSSIAN AND AMERICAN PROSPECTIVES

Within the framework of the Russian and American project
«Advancing theory and knowledge in public health sciences
on the issues of global health»

Velikiy Novgorod
2012

**METHODS TO PREVENT COMMUNITY HEALTH PROBLEMS.
RUSSIAN AND AMERICAN PROSPECTIVES**

Within the framework of the Russian and American project
«Advancing theory and knowledge in public health sciences
on the issues of global health»

Methods to prevent community health problems. Russian and american perspectives

Veliky Novgorod

2012

Editorial Board:

Viktor R. Weber, David R. Buchanan, Mikhail N. Pevzner, Georgy S. Arkhipov,
Ekaterina I. Arkhipova, Elvira Y. Kaminskaya, Nyudlia Araeva,
Natalia G. Abramova

This thematic collection contains materials based on the analysis of public health issues by Russian and American researchers. The authors discuss prevention methods and approaches to the identified health problems both in Russia and the US. The results of the various studies presented here show how public health prevention programs may offer a more humane and cost-effective approach to tackling those problems, rather than applying medical treatments after disease diagnosis. The papers present a model for the development of the joint educational program in public health in the framework of the Russian-American project. This program is being designed as part of the transition to new federal state educational standards and aims at the integration of students and graduates of medical and pharmaceutical universities of Russia in the world educational space.

This publication is funded by the Novgorod State University Strategic Development Program for 2012-2016 (Project 1.1.2. "Development and implementation of new educational programs in cooperation with foreign partner universities" within the Action 1.1. "Development and implementation of innovative methodological support for the transition of NovSU to multilevel training in competence-format").

Authors are responsible for all statements made in their work, including changes made by the copy editor and authorized by the corresponding author. Editorial opinion may or may not coincide with the points of view presented in the materials published.

FOREWORD

We are pleased to present the following articles on public health approaches to improving population health to an audience of Russian academicians. The papers are an outgrowth of a three-year collaboration between the Institute for Global Health at the University of Massachusetts, Amherst, USA, and the Institute of Medicine at the Novgorod State University. The reports were written by professors of School of Public Health at the University of Massachusetts, Amherst, almost half in collaboration with Russian colleagues.

With joint funding from the US Department of Education and the Russian Ministry of Education and Science, the goal of our collaboration has been to advance theory and knowledge on global health issues in the public health sciences. Like most countries across the globe, Russia and the United States are challenged by the growing burden of chronic diseases, such as heart disease, cancer and strokes. The results of the various studies presented here show how public health prevention programs may offer a more humane and cost-effective approach to tackling those problems, rather than applying medical treatments after disease diagnosis.

In the US, public health is considered a separate and distinct field from medicine, distinguished by two major characteristics. Where medicine provides treatment, public health delivers prevention services; and where medicine treats individual patients one-by-one, public health implements interventions aimed at the community as a whole. To illustrate these themes, the article by Buchanan discusses the complementary roles of public health and medicine in the US health care system. The piece by Carbone and Buchanan introduces a new approach to developing prevention programs, called Community Based Participatory Research, which aims to maximize the participation of community members in designing policies and programs that affect their lives.

Araeva and her colleagues take up one of the most serious issues facing Russia today, namely, depopulation, by analyzing the new demographic policies passed by the Russian Government, which are designed to reverse the problem of declining birth rates, and then comparing them with the views of citizens regarding their impact.

Another common public health problem in both countries is excessive alcohol use by college students. Linowski and DiFulvio present the results of an evaluation of the BASICS program, which was implemented to reduce alcohol abuse among college students in

Massachusetts. The positive results suggest that a similar program could be effective in reducing alcohol abuse among Russian college students.

In the final article of this special issue, Mooza and Mishekurin analyze relationships between smoking and alcohol consumption during pregnancy and the birth weight of infants. Low birth weight is a problem in both Russia and USA, and thus, it is critically important to determine the significance of hypothesized risk factors to develop effective prevention programs to promote healthy births.

We hope that these articles will shed more light on various public health approaches to improving population health used in the United States and promote the exchange of ideas and future scientific collaborations between researchers in both countries.

Sincerely,

Dr. David Buchanan,
Director, Institute for Global Health,
University of Massachusetts, Amherst

July 20, 2012

David R. Buchanan

THE DISTINCT PURPOSE AND ESSENTIAL FUNCTIONS OF PUBLIC HEALTH CARE SYSTEM COMPARED TO THE DELIVERY OF MEDICAL SERVICES IN THE UNITED STATES BY

Dr. PH, Director, Institute for Global Health, University of Massachusetts, Amherst

Abstract

In the U.S., the delivery of public health services has evolved into a separate and distinct system from medical care. Both the purpose and the types of services are now seen to be quite different in the two systems. Medical care is provided by physicians to diagnose and treat illnesses in individual patients. Public Health is delivered by a broad range of specialized public health professionals trained to develop health policies and implement programs that prevent disease and promote the health of the populations as a whole. Because medical training is expensive and it does not address the skills necessary to achieve the functions of public health, it is important to recognize the value and importance of delivering public health services by trained public health professionals

Key words: public health, medicine, functions, US, Russia

Introduction

The purpose of this paper is to describe and explain the differences between the medical care system and public health services in the United States. In the US, public health and medicine operate as two relatively independent yet complementary systems designed to maintain and improve the health of the American people. Generally speaking, medicine seeks to treat and cure individual patients, whereas public health seeks to protect and prevent health problems in the population as a whole.

The paper is divided into three parts. After a brief introduction comparing various health status indicators between the US and Russia, the bulk of the paper focuses on: 1) key characteristics that differentiate public health from medicine in the US; 2) the public health model; and 3) the structure and financing of the US public health care system and associated services.

To introduce the topic, the paper starts by examining several important health indicators in the US and Russia, specifically, life expectancy, healthy life expectancy, heart disease, stroke, drunk driving deaths, maternal mortality, infant mortality and diabetes (See Table1). The purpose is to show that there are significant differences in the health status of people living in the United States compared to Russia, which raises the question, why are

there such differences? While the full answer to this question goes well beyond the scope of this paper, one important reason for the large differences in health status between the countries is that the US has evolved a distinct autonomous public health care system that provides unique population-based prevention services, which enables people to stay healthy without need for medical treatment. These days, with the rise of chronic diseases, the emphasis on prevention is becoming increasingly important globally.

Health status differences between the US and Russia

Starting with life expectancy (see Table 1), in 2008, men in Russia could expect to live to the age of 62, while American men live to the age of 76, a difference of 14 years.

Table 1

Health Status Comparisons, United States and Russia

Indicator	United States	Russia
Life expectancy - males	76 years	62 years
Life Expectancy – females	80 years	74 years
Healthy life expectancy - males	67 years	53 years
Healthy life expectancy - females	71 years	64 years
Coronary Heart Disease - males	279/100,000	751/100,000
Coronary Heart Disease - females	177/100,000	453/100,000
Stroke – total population	32/100,000	251/100,000
Drunk driving deaths – absolute number	13,470	~15,000
Drunk driving deaths – rate	3.8/100,000	10.7/100,000
Maternal mortality	17/100,000	34/100,000
Infant mortality	6.2/1,000	11.5/1,000
Diabetes – total population	14/100,000	4.2/100,000
Behavioral risk factors		
Smoking - males	23.9%	58.1%
Smoking - females	18%	15.8%
Obesity - males	33.2%	9%
Obesity - females	35.3%	23.6%
Trends over time, United States		
Year	1950	2005
CHD - Males	593	205
CHD - Females	279	177
* - All statistics, WHO, for the year 2008.		

Similarly, Russian women could expect to live to the age of 74, while American women live to the age of 80. The difference in healthy life expectancy – that is, the amount of time that a person can expect to live free of disease and disability, without significant health impairments – shows a similar pattern. American men can expect to live a healthy life up to the age of 67, while Russian men will, on average, live only to the age of 53 before they

fall ill, most commonly to some form of chronic disease, such as stroke, heart disease or cancer.

Heart disease is the leading cause of death in both countries, but the rate at which Russian men suffer from heart disease is nearly 3 times higher than the rate at which American men contract heart disease. In a given year, out of 100,000 men, 751 Russian men will die of a heart attack, compared to only 279 American men. Likewise, the rate of heart disease among Russian women is more than twice as high as the rate for American women. Stroke is the third leading cause of death in both countries, but the rate of strokes in Russia is more than 800% higher than in the US. In other words, Russian people are 8 times more likely to suffer a stroke in the coming year than Americans.

If one looks at the total number of drunk driving deaths in each country, approximately 15,000 Russians died while driving intoxicated, while a total of 13,470 Americans died in drunk driving crashes in 2009. However, these figures are absolute numbers. If converted into rates (per 100,000 people), Russians are almost three times more likely to die in drunk driving crashes than Americans.

Turning to maternal mortality rates, the maternal mortality rate in Russia is twice as high as maternal mortality in the US. Similarly, the infant mortality rate in Russia is twice as high as the infant mortality rate in the US.

In contrast to these trends, it is important to note that Russia has a much lower incidence of diabetes than does America. Fourteen percent of the American population suffers diabetes, compared to only 4% of the Russian population, indicating a rate more than three times higher in the US. The different rates of diabetes serve to introduce the issue of behavioral risk factors and the challenges facing modern medicine.

The 20th century was marked by what epidemiologists have termed “the epidemiological transition.” As prosperity has grown in countries throughout the world, the death toll from infectious diseases has been eclipsed by the rise of chronic diseases. Chronic diseases now account for a greater portion of disease burden than infectious diseases in virtually every country in the world. However, unlike the largely successful search for cures for infectious diseases, modern medicine has been unable to develop treatments that restore complete normal healthy functioning for patients with chronic diseases. Rather, medicine has only been able to stabilize and slow disease progression. The partial, “halfway” success of medicine in treating chronic diseases has generated renewed interest and greater investment in prevention.

Infectious diseases are most commonly caused by the invasion of microbial agents, such as bacteria and parasites, for which the medical sciences have developed highly effective means to control. In contrast, the search for similar sorts of invasive agents that cause heart attacks, cancer and other chronic diseases went on for decades, but for the most part, has largely proven to be unsuccessful. What are the causes of cancer or heart disease? In a groundbreaking analysis, researchers in the Office of the US Surgeon General set out to identify the “actual causes of death” by estimating the number of deaths that could be attributed to various underlying causes [1,2]. That is, while people may die from a heart attack, the important question to ask is, “What caused the heart attack?” In these analyses, researchers determined that the “actual” causes of morbidity and mortality are led by smoking, obesity, physical inactivity and excessive alcohol consumption. These causes can all be characterized as behavioral, or lifestyle, risk factors. Thus, to improve population health, health care systems are now faced with the challenge of developing and delivering effective interventions to change human behavior. Significantly, because the initiation of unhealthy behaviors involves human volition and motivation, the search for effective means to alter the causes of chronic diseases goes beyond scientific considerations into the realm of moral and political principles. Where scientific medicine has reached its limit, the distinct contributions of public health services have grown increasingly important.

Two of the most significant behavioral risk factors are smoking and obesity. Here, one finds that Russian men smoke twice as much as American men, while the smoking rate among women in Russia and America is roughly the same. In contrast, the obesity rate among men in the US is more three times higher than among Russian men, while American women are 50% more likely to be obese than Russian women. The differences in rates of obesity clearly account for the differences in the diabetes rates found in the two countries discussed earlier.

To conclude this section, the final comparison presented here is the change in heart disease rates in the United States between 1950 and 2005. As seen in Table 1, the rate of heart disease was cut more than half during this period. What accounts for this drop? Why have heart disease rates fallen dramatically in the US? In 1964, the US Surgeon General released its landmark report on Smoking and Health. The publication of this report ushered in a new era of thinking about disease control and prevention in the US. From this point on, the focus of attention in health research and health services delivery shifted to examining the factors that influence human decision-making. Policymakers quickly realized that physicians could play only a limited, minor role in shaping the social environment that affects, for

example, the decisions of teenagers to start smoking, and hence, a much broader, comprehensive approach was necessary to reduce smoking rates. Judging by the remarkable decline in smoking, and consequently, heart disease rates in the US, the investment in new public health prevention programs and policies has been highly successful.

The Distinct Functions of Medicine and Public Health

With that background, this section describes the major differences in the functions and types of services delivered by medicine and public health in the US health care system. One definition of medicine widely recognized in the US is: “Medicine is the art and science of healing. It encompasses a range of care practices designed to restore health by treating illness. The goal of medicine is to heal sick persons in the encounter, here and now, between the physician and individual patient” [3].

In contrast, the goal of public health is to protect and promote the health of the population as a whole. Public health is defined as: “the sum of all those activities that fulfill a society’s collective responsibility for assuring the conditions for people to be healthy” [4]. Following from these definitions, two key characteristics are seen to distinguish public health from medicine. First, public health is population-based, versus the individual, one-on-one nature of clinical medical care. Second, public health is primarily responsible for prevention, whereas medicine focuses primarily on the treatment of disease. That is to say, people go to see the doctor after they have become sick or to detect early symptoms of disease.

Based on their different definitions and different purposes, the differences in the functions that each system fulfills begin to emerge. The practice of medicine is built on three primary functions: diagnosis, treatment and counseling. The doctor diagnoses the illness affecting the patient in the exam room. Based on her diagnosis, she prescribes an appropriate treatment. Finally, she counsels the patient about any restrictions in activities during treatment, how to recognize if the treatment is working or not, and how to avoid being afflicted by the illness again in the future. The practice of public health carries out three parallel but distinct functions: assessment, assurance and policy development. Public health professionals assess the health of the population as a whole, for example, in determining the leading causes of morbidity and mortality (to emphasize the point, it would be a foolish waste of resources to ask a physician, with no training in epidemiology, to do this, a type of skill service that is irrelevant to treating an individual patient). Assurance is the public health equivalent of treatment, but where a doctor prescribes medicine, surgery or radiation, the public health professional assures that the population is protected from unnecessary and preventable causes of diseases, such as assuring that the community members have access to

clean water, a safe food supply, the control of insects and other infectious disease vectors, controls over air pollution, radiation or other toxic exposures, control over false advertising, etc. Finally, the field of public health develops and implements public health policies that are designed to protect promote the health of the population as a whole (for example, raising taxes on tobacco products, regulating how and where alcohol is sold, automobile speed limit laws, food supplementation with essential vitamins and nutrients, requirements for immunization and other police powers to stop the spread of infectious diseases, etc.)

In 2000, the World Health Organization (WHO) issues a report that enumerated the specific and distinct services that public health delivers, marking international recognition of the need to health care services that go beyond the bounds of medicine [5]. The eleven services listed in the WHO report are:

1. Monitoring, evaluation and analysis of health status
2. Surveillance, research and control of risks and threats to public health
3. Health promotion
4. Social participation in health
5. Development of policies and institutional capacity for public health planning and management
6. Strengthening of public health recognition and enforcement capacity
7. Evaluation and promotion of equitable access to necessary health services
8. Human resources development and training in public health
9. Quality assurance in personal and population-based health services
10. Research in public health
11. Reduction of the impact of emergencies and disasters on health

As one can see, medical training does not qualify to perform almost any essential public health services. In the U.S., we believe that it is a tremendous waste of resources to train someone to be a physician, but then put them in a position where their primary responsibility is not to care for patients, but do something else, like direct a hospital. Knowing how to take out someone's appendix does not prepare someone to know how to manage a budget. Because it is expensive to train physicians, they should diagnose and treat patients, and not do other things. It takes a different type of training, designed to impart a different set of skills, for someone to be able, for example, to inform, educate and empower people about health issues or to mobilize community partnership to identify and solve health problems that that provided in medical schools.

In the US, in addition to the federal US Public Health Services and Center for Disease Control and Prevention, public health services are provided at the state level by taxpayer-funded Departments of Public Health run by the government (where, in contrast, almost all medical services are delivered by physicians in private practice). Different states have small variations in their internal organizations but generally areas such as Health Statistics; Environmental Health, Infectious Disease Control; Family Health and Nutrition; Community Health Promotion; Substance Abuse Services; Emergency Preparedness; and Health are Safety and Quality.

Summary and Conclusion

In Public Health, there is a famous story that is frequently used to explain the difference between medicine and public health. A physician is talking to his friend:

“You know, sometimes it feels like this. There I am standing by the shore of a swiftly flowing river and I hear the cry of a drowning man. So I jump into the river, put my arms around him, pull him to shore and apply artificial respiration. Just when he begins to breathe, there is another cry for help. So I jump into the river, reach him, pull him to the shore, apply artificial respiration, and then just as he begins to breathe, another cry for help. So back in the river again, reaching puling, breathing and then another yell. Again and again, without end, goes the sequence. You know, I am so busy jumping in, pulling them to the shore, applying artificial respiration, that I have no time to see who the hell is upstream pushing them all in” [6].

Instead of rescuing people who are drowning, public health looks upstream to prevent them from falling in the river in the first place. To prevent health problems, the field of public health model uses risk factor analysis to identify those risk factors that can be effectively and efficiently reduced. A health risk factor is anything that increases the chances of getting a disease. Common classes of risk factors include: biological or physiological factors; behavioral factors, physical environment; and the social determinants of health.

Diagram 1a and 1b illustrate how epidemiologists analyze the relationships among various risk factors, recognizing that some can be more easily and inexpensively reduced than others. Diagram 1b shows the relationships among different categories of risk factors, in this example, for heart disease. As one can see, a comprehensive approach to risk factor reduction requires services that fall outside the scope of medical care.

Based on the preceding review, I would like to propose that the most important differences between public health and medicine can be summarized in six major points (see Table 2).

Diagram 1a and 1b: Risk Factor Analysis

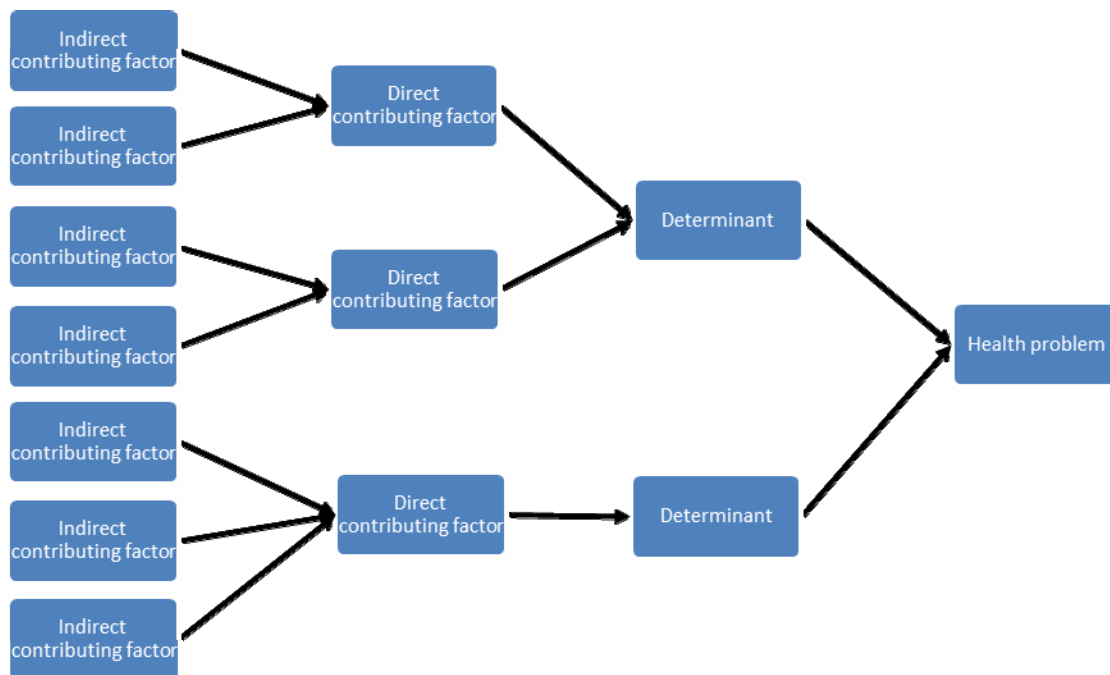
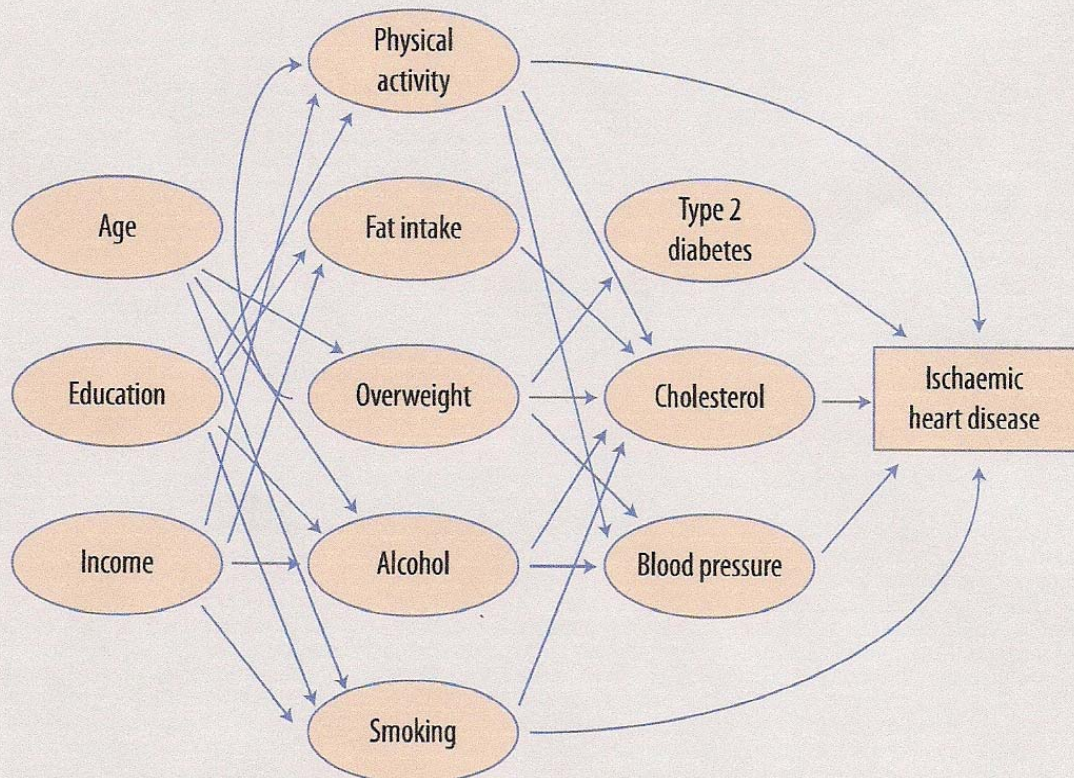


Figure 1: The causal chain. Major causes of ischaemic heart disease are shown. Arrows indicate some (but not all) of the pathways by which these causes interact.



First, the primary moral obligation of medicine is the best interests of individual patient, to provide the best treatment possible to the person. In contrast, the primary moral obligation of public health is the best interests of society. Public health is thus obliged to provide the most cost-effective interventions possible, and therefore, to determine which interventions will produce good health for the greatest number of people. Because resources are limited everywhere in the world, a national body must decide how to use scarce resources most efficiently for that country.

Table 2

Distinguishing characteristics of medicine and public health

Characteristic	Medicine	Public Health
Primary moral obligation	Best interests of individual patient; moral obligation to provide the best treatment possible	Best interests of society; scarce/limited resources necessitates priority setting; moral obligation to provide the most cost-effective interventions possible
Goal	Treatment	Prevention
Recipient of services	Individual	Population
Aim	Focus on controlling the agent (after invading the host)	Focus on changing the environment
Scientific foundation	Based in biological & physiological science	Multidisciplinary; multi-sectoral
Authority	Voluntary compliance	Police powers of the state

Because setting priorities conflicts with the physician's duty to provide the best treatment possible to the individual patient, policies regarding the allocation of health care funds are set by the public health care system in the US.

A second major difference lies in their respective goals. The goal of medicine is to provide treatment, where the goal of public health is to prevent diseases from occurring in the first place. Third, in medicine, the recipient of services is the individual, where in public health, services are provided at the community, regional and/or national levels.

Fourth, the aim of medicine is to control the agent of disease – the germ or micro-organism that causes the disease – whereas the primary aim of public health is to change the environment, to protect and promote the health of the population.

Fifth, the science of medicine is based in the biological and physiological sciences, where in contrast, public health is multi-disciplinary, drawing on and coordinating services across a broad range of sectors, such as environmental engineering, housing and sanitation,

education, education, economic development, human rights and anti-discrimination legislation (and enforcement), drug control, conservation and recreation.

Finally, physicians have to rely largely on voluntary compliance to get patients to adhere to treatment regimens, where public health has the responsibility and the authority to invoke the police powers of the state to compel people to follow health orders, most commonly in cases to prevent epidemic outbreaks (for example, quarantining people suspected of carrying XDR TB).

In conclusion, one important reason that the US has better health statistics than Russia is that the US provides a much higher level of public health prevention services than Russia.

References

1. McGinnis, J. Michael, and William Foege. 1993. Actual causes of death in the United States. JAMA : The Journal of the American Medical Association 270(18): 2207-2212.
2. Mokdad, Ali, James Marks, Donna Striup, and Julie Gerberding. 2004. Actual Causes of Death in the United States, 2000. JAMA 291(10):1238-43.
3. Pellegrino, E. The Internal Morality of Clinical Medicine: A Paradigm for the Ethics of the Helping and Healing Professions. Journal of Medicine and Philosophy 26 (6):559-79, 2001.
4. Institute of Medicine. The Future of Public Health. National Academy Press, Washington DC, 1988.
5. Pan American Health Organization/World Health Organization (PAHO/WHO), Public Health in the Americas: Conceptual Renewal, Performance Assessment, and Bases for Action (Washington, D.C.: PAHO/WHO, 2002).
6. McKinlay, J., McKinlay, S. The questionable contribution of medical measures to the decline of mortality in the United States in the twentieth century. Milbank Memorial Fund Quarterly Summer, 405-428, 1977.

Mikhail Pevzner, Elvira Kaminskaya

ACADEMIC PROGRAMS AS A TOOL FOR INTERNATIONAL STRATEGIC PARTNERSHIPS

Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia

Abstract

В статье обсуждаются вопросы конструирования международных образовательных программ в контексте интернационализации и глобализации высшего образования. В частности, на примере создания совместной российско-американской магистерской программы в области общественного здоровья анализируются преимущества и трудности подобной формы международного сотрудничества вузов.

Key words: education, internationalization, educational programs, US, Russia

Internationalism and globalization has long become well-established contexts for contemporary education. Researchers describe internationalization of higher education as “the process of integrating an international/intercultural dimension into the teaching, research and service functions of the institution” [3:21], and propose three different models of this process: competitive, liberal, and social transformation models [4].

In the competitive model, introducing international content into curricular and other elements of campus life is chiefly a means to make students, the institution, and the country more competitive in the global economic marketplace.

According to the liberal model, the primary goal of internationalization is self-development in a changing world and/or global education for human relations and citizenship.

The social transformation model suggests that the most important goal of internationalization is to give students a deeper awareness of international and intercultural issues related to freedom, democracy and justice, and to give them the tools to work actively and critically towards social transformation.

In our view, a deeper insight into this process can be gained through the correlation of levels and approaches to internationalization. We distinguish three levels of internationalization:

1. International contacts in the sphere of culture and education;
2. Cooperation in research and education;
3. International strategic partnerships.

The first level includes faculty, student and post-graduate student exchange programs; inviting visiting scholars from abroad; technical assistance; organizing international conferences, workshops and master classes. This level correlates with the activity approach which touches upon the surface layers of the process, but not the essential features. It doesn't influence to a great degree the curricular development, the quality of higher education, and the level of intercultural competencies acquired by teachers and students. In other words, the activity approach is rather fragmented and uncoordinated, whereby the relationship, impact and benefits between and among the activities are not taken into consideration.

The second level implies development of cross-cultural educational programs; implementation of new educational technologies; recruiting and training international students; organization of practical training abroad, and the use of international quality assurance systems. This level correlates with the process approach which stresses integration

or infusion of an international/intercultural dimension into teaching, research and service through a combination of a wide range of activities, policies and procedures.

The third level, the level of strategic partnerships, is the highest level of internationalization. Novgorod State University has general and special agreements on cooperation with 30 universities from all over the world, but it doesn't mean that all these partners are our strategic partners.

By international strategic partners we understand institutions of higher education situated in two or more different countries which are linked by:

- Long-term cooperation agreements;
- Joint projects in research and education;
- Partial integration in facilities, human and information resources that helps the fulfillment of strategic objectives;
- Development of twinning programs;
- Establishment of branch campuses.

As a good example we can name the strategic partnership between Novgorod State University and the University of Hildesheim, Germany. The agreement between our universities fostered the development and implementation of a joint Bachelor and Master Degree Program in Education and Psychology. As a result, seven Russian students are already awarded with Bachelor degrees from both partner universities, and five German students have come to NovSU to take this program.

The level of strategic partnerships is described by a combination of the competency approach and the supportive culture approach. The competency approach emphasizes the development of skills, knowledge, attitudes and values in students, faculty and staff. The issue central to this approach is how generation and transfer of knowledge help to develop competencies in the personnel of the higher education institution so that they become more internationally knowledgeable and interculturally skilled.

The supportive culture approach emphasizes creating a culture or climate that values and supports international/intercultural perspectives and initiatives. This approach acknowledges that the international dimension is fundamental to the definition of a university or any other institutions of higher learning, and believes that without a strong belief system and supportive culture, the international dimension of an institution will never be realized.

For example, we notice that more and more students of our university acquire intercultural competency, and international dimension is gradually becoming an essential part

of our corporate culture. It shows through such initiatives as International Week we have just opened today, where international and local students join together in organizing festivals, competitions, intercultural cuisine shows, and other events.

Universities and academic systems have developed many strategies to respond to globalization as the key reality in the 21-st century. Educational institutions are currently implementing a wealth of policies to benefit from this new global environment. Student and scholar mobility, which has become “big business”, is one of the most visible aspects of this process.

Universities establish partnerships with academic institutions in other countries in order to offer a degree, develop research projects, and collaborate in a variety of ways. Usually such international academic programs are implemented within the resources of several universities located in different countries, contain cross-cultural and intercultural components, aim at improving and complementing the whole process of training, improving the quality and the competitive advantages of a specialist in the labor market by a wide range of additional services, and include provisions for the recognition of prior education, harmonizing curricular in different countries and accreditation of final degree certificates.

One of the many possible manifestations of home campus internationalization strategies (which may include branch campuses, twinning programs, franchising arrangements, etc.) is the establishment of dual degree programs.

Dual degree programs run parallel in partner universities in the language of study and/or foreign language intermediary (English), provide the same structure and content of training modules, common methods and learning technologies, common procedures for intermediate and final testing, and are comparable to the invariant part, but different specializations or profiles provided by each partner.

The numerous opportunities presented by international exposure and experience are evident both at the institutional and individual levels.

Institutions contribute to home campus internationalization by means of raising their international profile; expand, complement and enrich educational content, and gain expanded capacity-building for under-resourced universities.

Individuals gain perspective and insight that will increase their capacity to function in a globalized society; esquire global engagement and cultural intelligence; improve language skills/language proficiency, and enrich their personal growth and development.

Our paper discusses the issues of design and development of such a program under the current Russia-U.S. project “Advancing Theory and Knowledge in Public Health Sciences on

Global Health Issues” run by the consortium of Yaroslav-the-Wise Novgorod State University (NovSU) and the University of Massachusetts, Amherst (UMA). The project co-directors are Prof. Viktor Weber, Rector of NovSU, and Prof. David Buchanan, Director of the Institute for Global Health, UMA.

One of the six major objectives formulated by the project teams is to complete a feasibility study on establishing a dual NovSU/UMA graduate degree program in Public Health that includes the use of long-distance and blended learning technologies. As the first step towards the design of the future dual degree program, we explored the feasibility of harmonizing the level and duration of the program in partner universities.

We’ve studied standard graduate programs already existing at UMA (Graduate Program in Health Policy and Management; Graduate Program in Public Health), and then compared them to the requirements set by the Russian Ministry of Education and Science for educational programs in health sciences.

The comparative analysis highlighted incompatibility of Russian and American educational systems that presents a serious challenge for the program development.

The transition to the two-cycle degree system under the Bologna Process is not yet affecting medical faculties in Russia, so we can not speak about a graduate degree in Public Health at NovSU. The closest match seems to be a two-year clinical residency program where students get certificates of additional education.

Another challenging issue is measuring coursework (teaching load) and further recognition of learning outcomes. According to U.S. standards, two-year MPH students are required to complete a minimum of 48 units of coursework over four academic semesters and one summer. Similarly, according to the Russian standard requirements, the general workload for two-year clinical residency students includes 1728 academic hours per one year of study (3456 academic hours for a two-year program). Again, the comparative study of Russian and American approaches to the calculation of total number of credit units/hours is different because our colleagues from UMA don’t add up students’ individual work and final evaluation to the number of credit units allotted for classwork.

Our next step was to determine the core content elements/modules, or the invariant part of the dual degree program that would be common to both partner universities (see Table 1). Table 1 shows that many thematic units are compatible, so we have a good platform to build our program on. At the same time, each partner can provide its own variable elements/courses in addition to the common core. For example, to rise their cross-cultural competence and understanding, UMA students can choose to take the course “Public Health

and the Law in Russian Federation”, and students at NovSU may want to learn about Public Health and the Law in U.S. In order to participate in exchange programs and gain practical experience with an international focus, students should take intensive language courses (Russian and English, respectively).

Table 1

Core (invariant part) of a dual NovSU/UMA graduate degree program in Public Health.

Thematic Modules	Credit Units
Epidemiologic Methods	3
Health Economics	3
Health Care Marketing	2
Public Health Core Breadth Seminar	3
Introduction to Probability and Statistics in Biology and Public Health	4
Information Systems in Public Health	3
Strategic Management and the Organization of Health Services	3

To continue our work on dual degree program design, we should move on to looking at the course content across cultures and further adjustment of the existing curricular.

While the above mentioned incompatibility of education systems, cultural norms, or labor market requirements may present a serious challenge for program development, there are still other significant barriers at institutional and policy levels that tend to play down the role of international dimension in higher education and hamper the development and further successful implementation of international academic programs.

1. Lack of financial support for current international academic programs.

To be meaningful and sustainable, international programs require access to some amount of resources (human and financial) as well as their effective deployment and management. Finding and leveraging appropriate resources is a major task moving forward, particularly in contexts where the international dimension is viewed as an optional action area, rather than as an integral component of the academic enterprise and administrative apparatus. In the current situation, any dramatic cuts in the financial support put at risk the whole project and make us revise its goals and objectives limiting the opportunities to engage internationally.

2. A challenge of any fixed-term, externally funded initiative is long-term sustainability by an entity other than the original investor. The introduction of tuition fees might limit availability and leave the advantage of choosing international programs for the wealthiest or otherwise socially privileged students.

3. Inequalities in higher education.

The academic world has always been characterized by centers and peripheries. Typically, large, research-intensive universities with long academic traditions, many academic fields, professional schools, numerous academic staff and student population hold a huge advantage over regional universities serving specific local, national, and regional needs. In order to make funding decisions, national governments are increasingly using the many rankings of academic institutions and degree programs. Although criticized by many, these rankings are considered “a new force in national, regional, and global higher education”, and are often taken seriously by the public, universities, and at times governments, thus contributing to academic inequality as part of the global higher education landscape.

For example, the recently established federal and research universities in Russia were recommended by the government for participation in the new application round of the Russia-U.S. FIPSE Program, while the less privileged regional universities were out of the list. This situation puts special strains on peripheral Russian universities facing the dilemma of internationalizing their campuses and fighting for equal opportunities with stronger universities.

In conclusion, it is important to realize that the risks, costs, and challenges facing the development of international dimension in higher education can be minimized only by collective efforts of the global academic community. These challenges require policymakers, administrators, and professors to reconsider the structure of traditional degree programs as well as the pedagogy of the past [1]. “Talk and chalk” [2] is far from adequate as we move further into the 21-st century.

References

1. Altbach, Philip G., Reisberg L., Rumbley Laura E. (2009) Trends in Global Higher Education: Tracking an Academic Revolution. *A Report Prepared for the UNESCO 2009 World Conference on Higher Education*. Paris, UNESCO, 2009. Published with support from SIDA/SAREC.
2. Butcher, N. (2008) ICT and Higher Education: A Summary of Key Issues for Consideration. *Unpublished discussion prepared paper for the first meeting of the conference committee for the UNESCO 2009 World Conference: 'The New Dynamics of Higher Education.'*
3. Knight, J. (1993) Internationalization: management strategies and issues, *International Education Magazine*, 9 pp. 21-22.
4. Warner, G. (1992) Internationalization Models and the Role of the University, *International Education Magazine*, 1992, p. 21.

Lidia Proshina, Maria Grigor'eva, Natalya Fedorova

**OPTIMISATION OF STUDENTS' INDEPENDENT WORK IN
MORPHOLOGICAL DISCIPLINES FOR IMPROVEMENT OF QUALITY OF
EDUCATION FROM THE STANDPOINT OF NEW EDUCATIONAL STANDARDS**

Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia

Federal state educational standards are a set of requirements, mandatory during the realisation of basic education programs. The distinguishing feature of the new standard is its activity-based nature that makes personal growth of the student its main goal. The education system forgoes the traditional presentation of education results in the form of knowledge, abilities, and skills; wording of the standard point out actual types of activities, which the student must master by the time of their graduation. Professing the principle of competence-based approach, a university graduate should be viewed as a competent person. The specificity of competence-based education is that the assimilation is not of "ready knowledge", given by someone, but "the tracing of conditions of the origin of this knowledge" [1]. Thus, in the modern conditions of improvement of the educational process the instructor's task is to strengthen the individual approach, develop creativity in the future specialist, and a reliance on independent work. The search of mechanisms for improving quality of the professional education of students is the leading task of the academic staff of the university. The academic staff of the Department of Human Morphology gives priority to the improvement of educational and methodological process, and the development of innovative technologies. All types of independent work provided for in each discipline's curriculum are provided with methodological instructions, which are an integral part of methodological support of the taught discipline. The organisation of student's independent work (SIW) includes constant analysis of the contents and methods of teaching by the instructor. During the learning process the student, perceiving, must comprehend and memorize information, so as to be able to apply acquired knowledge in similar and new situations. The learner, thus, must have the skill of independence in the acquisition knowledge. For the goal of learning process optimisation during classes, acquisition of self-organization skills in studying of fundamental medical disciplines – Anatomy, Histology, Cytology, and Embryology, as well as Topographic Anatomy and Operative Surgery, individual workbooks and albums are used at the department.

During each practical class, taking into consideration the requirements of modern educational programs, time is given for curricular students' independent work that is

supervised by the instructor. All methodological instructions in the workbooks for each discipline are strictly defined into curricular and extracurricular SIW. Extracurricular SIW includes laborious assignments, which require detailed work with the textbook and additional literature during preparations for each topic. During practical classes, as part of curricular SIW, filling graphological structures of organs' and body systems' structures, as well as their topography, filling differential charts, localizing parts of organs, structural components of tissues on diagrams and illustrations, electron microscopy images are offered. Materials present in workbooks and albums are structured according to the basic stages of practical classes. Each class' workbook's contents include: motivational introduction, informational unit, independent assignment exercises, "blind" histological and anatomical images for diagnostics and studying of the microspecimens, situational problems for the development of scientific and creative thinking, topics for student scientific research.

The traditional form of practical student work in classes is microscopic and macroscopic studying of the specimen, searching and finding structural components of tissues and organs. After such a detailed study of an object a student must make a schematic illustration in the album. Without a theoretical basis making a correct and complete histological or anatomical illustration for the student usually proves to be very difficult. The illustration must reflect the presence of basic structural components of the tissue or organ, form and size of morphological structures, order of layers and membranes, scale and comparison of the studied components. A histological illustration helps the student to imagine the essence of the studied structures and better memorize them. Performing such a task is not so easy. It is preceded by a very thorough comprehension of theoretical material. Initial information the students receive from lectures, textbooks, additional literature. However, taking into consideration the vast amounts of information, the students' load on other disciplines, the uniqueness and novelty of subjects, a student may not always fully and quickly complete the assignments given during classes.

A gradual completion of assignment, methodological instructions present in the workbooks direct the students' activity, stimulate the revision and generalization of studied material as well as the analysis and detailed characterisation of studied objects. After such preparatory work, detailing and specification of theoretical basics of the studied topic, it is far easier for the student to proceed to microscoping, and the analysis of micro- and macrospecimens. In the disciplines' workbooks there are short theoretical characteristics of the micro- and macroscopic structure of all organs for each studied topic in accordance with the curriculum. There are instructions what is to be illustrated as well as which structures are

to be found and marked. All diagrams and illustrations, which were previously studied by the student, help to quickly, efficiently, and with great accuracy complete an assignment.

The use of individual workbooks for each discipline increases the students' motivation for studying fundamental medical disciplines, forms a conscious attitude towards studying and professional activity. Motivating independent work actualizes practical and intellectual activity of students, without which there is moving towards knowledge.

It should be noted that the improvement of the purposeful management of cognitive function through student educational research (SER) is important.

SER is an integral part of the learning process and is done in accordance with the disciplines' curricula as part of practical classes in the form of Subject Olympiads, specimen contests, preparation of reports. The development of SER is inhibited due to tremendous amounts of learning material and almost complete absence of practical skills and methodological knowledge of first year students in terms of scientific research.

The main goal of SER is an independent completion of certain assignments by the students. These assignments should not be simplified, rather, they should be focused on the high level of knowledge, so as the student, while performing them, would apply certain effort and use their creative and search potentials. At the same time, however, assignments that are too difficult and would hinder the students in their current learning process shouldn't be given. SER complements the learning process, adding into it elements of individual creativity. Independent SER work of each student fosters thinking and analysis of situation.

The most effective methodological techniques are: short (3-5 minutes long) student reports during the practical class on some specific question in the form of either a review or a specimen demonstration; student contests for making natural anatomical and histological specimen according to the curriculum with a subsequent presentation to the student audience; student contests for best oral presentation; Subject Olympiads with the additional use of tests and written answers to special questions; making a literature review using modern informational technologies; production of stands, preparation of anatomical and histological illustrations, charts, and educational films. According to the results of student scientific-practical research a scientific student and young scientist conference is held in the April annually. According to the results of the conference a collection of scientific articles is published; the publication of these articles has principal significance in choosing postgraduate education for the student (clinical residency, graduate school). A written report, which the student presents at NovSU conference or at an inter-university level, teaches scientific communication with the audience, logical presentation and explanation of the material on

Anatomy and Histology, Topographical Anatomy and Operative Surgery. All this contributes to the expansion of the scientific outlook, the ability to analyse, and consolidates acquired knowledge on the subject. Typically, this form of work develops and promotes the formation of clinical thinking.

In the course of SER the students reveal such traits of creativity as envisioning new problems in standard situations, discovering new functional capabilities of a familiar object, forming alternative solutions to arisen situational problems, ability to independently transfer knowledge and skills into a new situation, selecting parts, elements of an object in their connection, finding an original solution based on acquired skills and abilities. Research gives the opportunity to uncover the creative potential of outstanding students. Any form of SER increases the students' interest in studying, involves them in independent creative activity and for many is a kind of a stepping stone for future research work.

References

1. Bolotov, B. A., Serikov, V. V. (2003). Competence-based model: from an idea to an Education program. *Pedagogy*, 8-14.

Victor Lisitsin, Pavel Fedchenko

REGIONAL DYNAMICS OF MAIN CAUSES OF MORTALITY

Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia

Abstract

The analysis of mortality from main causes in Novgorod Region (NR) during 1991 – 2010 (last decade of XX century and first decade of XXI century) is presented. There are differences in mortality rates between the Russian Federation (RF) and the North-West Federal District (NWFD). Analysis showed that most rates of the region significantly exceed. Overall mortality rate is 1.4 times higher than in RF and 1.3 higher when compared to NWFD. Since 2004 the consistent trend of mortality decrease and life span increase has been established. Despite this tendency the level of mortality is still high.

Key words: mortality, main causes of death, life expectancy at birth, dynamics of mortality rates.

Maintenance and strengthening of mortality rate decreasing in RF that have begun last 5 years become the most important social, medical, economical and mostly political problem. There is a significant distinction in mortality rates of different regions of the Russian

Federation due to its various natural, climatic, economical, social, ecological factors and demographic content that allows assessing of sanitary welfare of population, features of pathology in certain social groups. Therefore regional research of main medical demographic index – mortality rate – becomes extremely important nowadays [6,8,11,14,15].

Data of government statistics have been used for advanced research of mortality rate in NR beginning with 1991 when RF became an independent state. Analysis has been carried out basing on data for 1991 – 2010 [5,10,12,13]. All death causes are given according to the International Statistical Classification of Diseases – ICD-10 [9]. Statistic indices (rates) are calculated per 1000 (‰) or 100000 (‰_{0000}).

Analysis of mortality rate showed that it has negative tendency in NR during last 20 years. Depopulation of NR and RF in general is caused by high mortality rate. Throughout all analyzed period mortality rate exceeded not only rate of RF, but also of NWFD. NR continued being among regions with mortality rate that has not exceed 20 - 21‰ corresponding with high and very high mortality rate - the Komi-Permyatski Autonomous District – 21.5‰, the Koryak Autonomous District – 20.9‰, the Pskov Region – 21.2‰, the Novgorod and Tver Regions – 20.1‰.

Beginning with 1991 there was distinct tendency towards increasing of the rate that changed with decreasing in 1995 – 1997; in 1998 the increase of the rate has been again observed reaching its maximum – 23.5‰ – for the whole analyzed period in 2003 with following decrease to 20.1‰ in 2007, in other words return to index of 1994 (20.3‰). During following years the rate is characterized by instability: new increase of the rate has been noted in 2008 both in NR and NWFD (from 20.1‰ to 20.9 ‰ and from 15.6‰ to 15.7‰ correspondingly). However, decreasing of the rate continued in 2009 and 2010 in all analyzed regions: NR – 20.5‰ and 20.1‰; NWFD – 15.2‰ and 14.9‰; in RF the rate is stable during these two years – 14.2‰ (Fig. 1).

There is unprecedented reduction of absolute number of deceased by 1124 (by 8.5‰ in the region in 2011 comparing with the last year (2010) that caused the lowest mortality rate for the last 12 years – 18.4‰ (2010 – 20.0‰; 2009 – 20.5‰) [4].

There are remarkable gender differences in overall mortality rate. During 1996 – 2010 male mortality rate exceeded female one by 1.3 times in spite of annual changes of the rate (Fig. 2).

Among employable population exceeding of male mortality rate is significantly higher than of female one. In 1996 male mortality rate was 4.8 times higher (maximum exceeding).

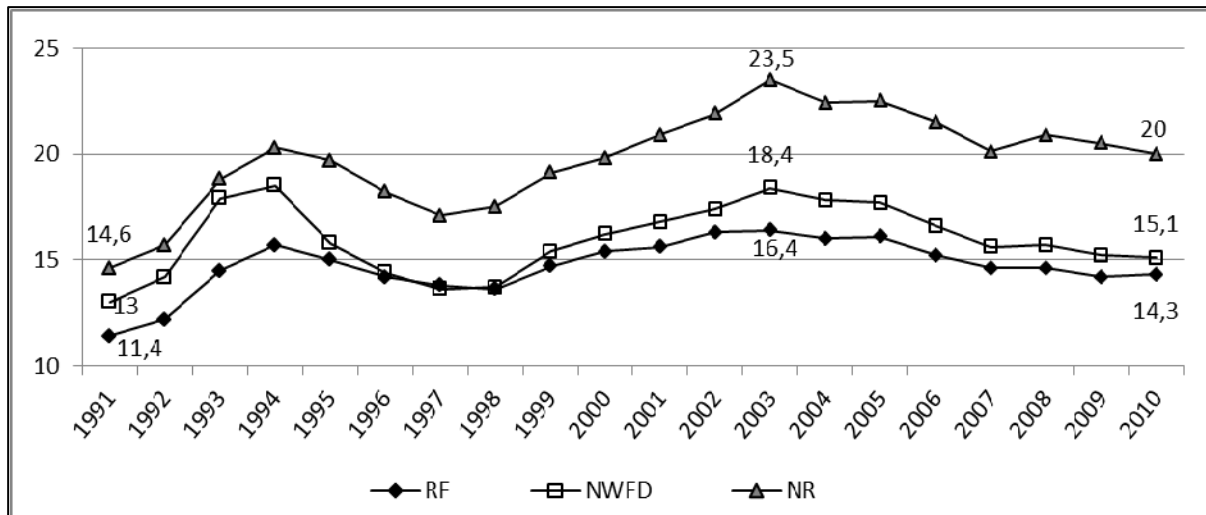
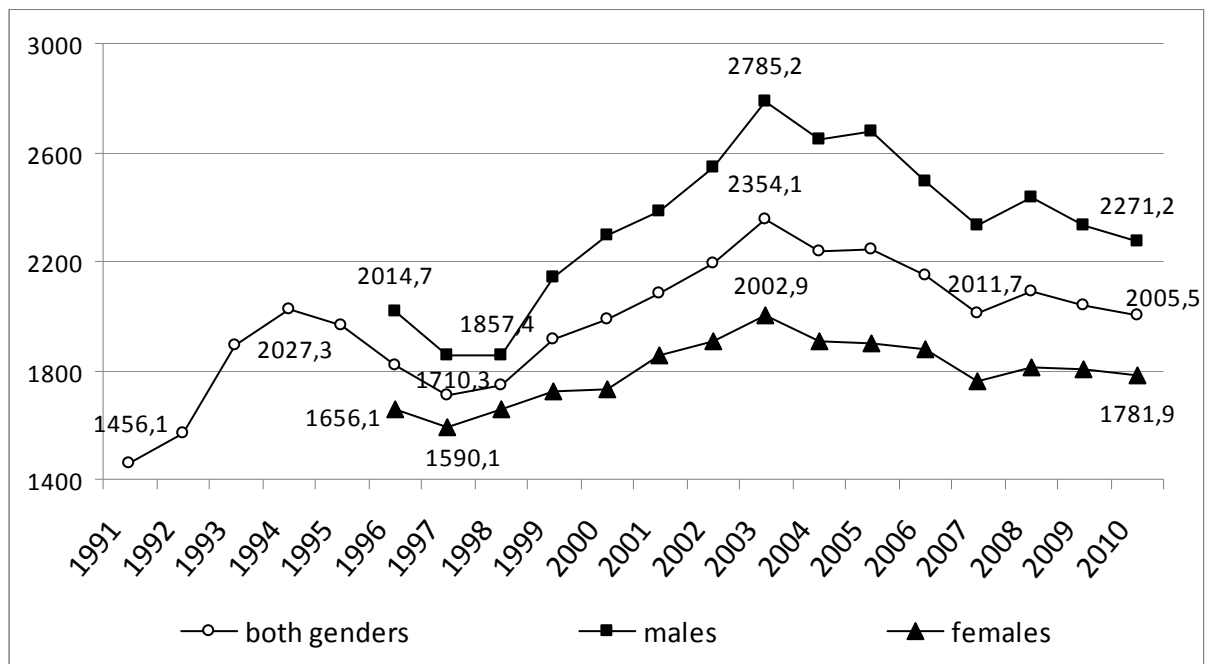


Fig. 1. Dynamics of mortality rates in regions of the Russian Federation (per 1000)

However, following years the difference has been reducing: 2000 – 4.3, 2003 – 4.1, 2010 – 3.8 times; this fact was noted in other publications [1, 2, 7].

Mortality situation both in NR and generally in RF is determined by 3 classes of diseases forming more than 85% of all death cases both in whole population and females and males. Mortality from all main causes in all gender-age groups is higher in NR than in NWFD and RF in general. Its breakdown, levels and contribution to total mortality rate presents specific interest. Analysis of mortality rates revealed changes in structure of the main causes of population mortality.



**Fig. 2. Dynamics of mortality rate in the Novgorod Region
(per 100000 of corresponding gender)**

Cardiovascular diseases (CVDs) are still the main cause of high mortality. This group of diseases takes consistently the first place among the mortality causes in NR during all analyzed period and its rate exceeds the same rate in both NWFD and RF; thus, it is considered as super mortality from CVDs in NR.

Dynamics of mortality rate from cardiovascular diseases and its contribution to overall mortality rate during analyzed period was uneven. The highest mortality rate from CVDs has been observed in 1994 – 1168.1 ‰ following decreasing of the rate that continued till 1999. New century began with the rate of 1168.3 ‰ that reached its maximum – 1460.6 ‰ in 2003, then decreased to 1224.6 ‰ (2007). Next years were characterized by instability: 2008 – 1267.2 ‰, 2009 – 1234.7 ‰; and the increase of mortality rate continued in 2010 – 1250.4 ‰.

Among all territorial subjects of RF mortality rate from CVDs is higher only in 2 regions: Pskov – 1305.5 ‰ and Tver – 1286.3 ‰. Its contribution to overall mortality rate increased being higher than in NWFD and RF (Table 1). The absence of stability in decreasing of the rate was caused by insufficiency and inefficiency of carried out preventive measures.

Table 1

Main mortality causes breakdown during 1991-2010

Cause of death	Novgorod Region		Northwestern Federal District		Russian Federation	
	per 100 000	%	per 100 000	%	per 100 000	%
1991						
Total	1456,1	100,0	1135,6	100,0	1139,3	100,0
Cardiovascular diseases	844,7	58,0	628,4	55,3	621,0	54,5
Malignant neoplasms	244,2	16,8	217,4	19,1	197,8	17,4
External causes of diseases and death	179,1	12,3	145,5	12,8	142,4	12,5
2000						
Total	1984,3	100,0	1620,0	100,0	1540,0	100,0
Cardiovascular diseases	1168,3	58,9	918,6	56,7	852,2	55,3
Malignant neoplasms	242,8	12,2	225,4	13,9	204,4	13,3
External causes of diseases and death	289,2	14,6	242,2	15,0	220,6	14,3
2010						
Total	2005,5	100,0	1491,3	100,0	1419,2	100,0
Cardiovascular diseases	1250,4	62,3	860,8	57,7	805,9	56,8
Malignant neoplasms	221,0	11,0	229,4	15,4	205,1	14,4
External causes of diseases and death	207,9	10,4	156,3	10,5	151,7	10,7

There are remarkable gender differences. Both in male and female population during 1996-2012 maximum mortality rate from CVDs has been observed in 2003 – 1512.3 and

1418.4‰ correspondingly. Throughout following years on the background of the rate decreasing there is variability of the rate in certain periods. In 2010 male mortality rate increased by 19.5% comparing with 1996, during the same period female mortality rate increased only by 8%. There are changes in CVDs contribution to overall mortality rate: in males it increased from 49.5% to 54.6%, in females it was stable – 70%.

Coronary and cerebrovascular diseases, diseases characterized by arterial hypertension and other heart diseases being 88.1% in 2000 and 92.9% in 2009 are the leading causes of death among all CVDs. As the analysis showed term «other heart diseases» was presented by «alcoholic cardiomyopathy» in more than 50% cases.

During analyzed period mortality from other heart diseases has increased most significantly – by 1.6 times (from 90.8‰ in 2000 to 144.7‰ in 2009), while mortality from coronary disease has grown by 8.4% (from 554.7‰ to 601.4‰), from cerebrovascular disease – only by 1.2% (from 358.8‰ to 363.4‰). Also it was noted that mortality from heart attack also has grown (by 34.7%). At the same time diseases characterized by arterial hypertension have consistent tendency to decline – by 8.4% (from 40.6 to 37.2‰).

Thus, aggravation of mortality rate from cardiovascular causes has occurred, first of all due to growth of mortality from «other heart diseases». It is necessary to note that alcohol consumption leads not only to death due to alcoholic cardiomyopathy (other heart diseases), but also increases risk of death from coronary heart disease and cerebrovascular disease first of all in female population.

Changes in mortality from malignant neoplasms (MNs) are as controversy as it is in mortality from CVDs.

The breakdown of death causes has been changing till 2009 in NR (2006 in RF and NWFD): “external causes of diseases and death” took the second place as a result of complex social and economical processes during last decade of XX century.

MNs moved up to the second position in 2009 – 233.4 per 100000, and external causes of diseases and death moved to the thirds one – 223.8 per 100000. This change is caused by the growth of the mortality from MNs and decreasing of mortality from external causes.

Mortality from MNs decreased (by 10.3%) in 2010 comparing with 2000 and became 221.0‰ that is 3.8% lower than in NWFD, but 7.2% higher than in RF in general. Contribution of MNs to overall mortality rate in NR is consistently decreasing from 16.8% in 1991 to 11.0% in 2010, at the same time in NWFD and RF it falls and rises (Table 1).

Mortality rate in the region during analyzed period exceeded the rate in both RF and NWFD except for 2010.

Among males MNs take the stable third place after external causes of diseases and death, among females the situation is opposite – MNs are at the second place and female mortality at the same time has not virtually changed – 2000 – 200.9 ‰, 2009 – 196.1 ‰ (decrease by 2.4%), and the rate at male population decreased by 7.0%.

During the analyzed period mortality rate has been changing every year not only among all population (maximum in 1999 – 252.3 ‰, minimum in 2004 – 220.8 ‰), but also in males (maximum in 1996 – 306.3 ‰, minimum in 2010 – 270.9 ‰) and in females (maximum in 1999 – 202.4 ‰, minimum in 2004 – 175.2 ‰); it shows that there is no steady tendency in decrease of mortality from MNs. Among both males and females there is decrease in 2010 comparing with 2009. The leading diseases causing are MNs of digestive tract, respiratory tract and organs of thoracic cage, breast cancer in females; its portion among all MNs in 2009 was 85.2% in the whole population.

The analysis of standardized ratios of mortality from mentioned causes showed that there was no evident increase of the rate in all population groups; that points at the stabilization of the mortality ratios. The picture of mortality from MNs has become more various. The growth of prostate and pancreas cancer, cancer of lips, oral cavity and pharynx are registered.

Mortality from external causes (ECs) such as traumas, poisoning, burns, murders, suicides significantly differs from death causes from diseases because possibility to decrease rate of mortality from ECs is defined not only by condition of healthcare system, but also by social and economical, technical development of country.

The first year of the new century was marked with growth of mortality rate from ECs that had begun in 1999. Maximum of injury mortality rate (338.1 ‰) has been registered in NR in 2003 that was 44.7% higher than in RF and 28.9% higher than in NWFD. Among males (580.4 ‰) and females (140.7 ‰) of NR the highest level was registered in the same year; it exceeded similar ratios both in RF (males - by 1.5 times, females – by 1.4 times) and in NWFD (males – by 1.3 times, females – by 1.2 times).

From 2004 decrease of mortality from ECs was registered in all investigated regions. Mortality rate in NR descended to 207.9 ‰ (on 61.5%) in 2010 compared with 2003, while in RF and NWFD it decreased by 64.5 and 59.6% correspondingly; thus this process has been developing with different intensity. From all causes mortality from ECs are the only ones that

have remarkable tendency towards decreasing during the last six-eight years. It gives evidence that social and economical situation in modern Russian community is stabilizing.

Notable decrease of mortality rate has led to alteration of ECs contribution to overall mortality (in NR – from 14.6% to 10.9%) and its moving from the third place to the second (Table 1). However NR is still leading in NWFD (with the Nenets Autonomous District – 251.1‰ and the Pskov Region – 233.1‰) in mortality from ECs. Also decrease of mortality rate in NR was registered both among males – 380.0‰ and females – 98.6‰. Male mortality exceeded female one by 3.8 times.

The leading causes defining mortality from ECs are car accidents, accidental alcohol poisoning and effect, premeditated self-injury (suicides), aggression (murders) which composed the half of all mortality causes in 2010. Rate of mortality from all causes among men is much higher than among women; the greatest distinction was defined in premeditated self-injury (suicides) – by 5.6.

The most significant component of overall mortality rate is infant mortality. During 1990-2010 this index decreased correspondingly from 18.2 to 7.2 per 1000 live-born. It is worth to mention the feature of the rate: during the first decade of XXI century infant mortality rate was higher in NR than in NWFD (2010 – 7.2‰ in NR and 5.6‰ in NWFD), but lower than in RF in general (7.2‰ in NR and 7.5‰ in NWFD). The rate does not exceed limit defined by European Bureau of WHO – 10 deaths per 1000 live-born.

The structure of infant mortality through these ten years having remarkable tendency of decreasing of all main mortality causes has not changed. The certain perinatal conditions take consistently the first rank (2000 – 67.3, 2010 – 29.2 per 10000 live-born – decreased by 2.2 times). Changes of the 2nd and 3rd ranks took place in 2010: congenital anomalies, deformities and chromosomal disorders moved from the second position to the third one due to decrease of mortality from 15.4 to 8.3 per 10000 live-born; diseases of respiratory tract moved from the third place to the second one due to growth in mortality (from 5.6 to 11.1). From the beginning of 2008 there is unfavorable tendency – growth of infant mortality from ECs (from 2.9 to 5.6) and from certain infectious and parasitic diseases – from 5.8 to 8.3 per 10000 live-born. It should be noted that there were no mortality cases from infectious diseases in 2009 and diseases of digestive tract have not been registered as the mortality cause in 1 year old children since 2005.

Life expectancy of population (LE) is the most summarizing characteristics of present mortality rate in all age groups. During all analyzed period LE was lower in NR than in RF

and NWFD. Since 2000 this rate has marked decreasing tendency having reached its minimum in 2003 (60.8 including males – 53.8, women – 69.64 years; the gap was huge and comprised 15.7 years); it was associated with maximum mortality. Decrease of mortality that has begun in 2004 led to growth of LE, which was 64.5, men – 57.7, women – 71.8, gap – 14.1 years in 2009. Despite increase LE still remains 4.2 years less in NR than in RF and NWFD. It should be noted that NR is one of the territorial subjects of RF (including autonomous districts of Siberian and Far Eastern Federal Districts) with the lowest LE among males and huge gap of LE between males and females – 14.1 years.

Thus, on the one hand the mortality rate in NR reflects all-Russian tendency, on the other it has its own features defined by social and economical conditions. NR as RF in general and NWFD has persistent tendency of mortality reducing and LE growth. However, all positive changes in improving of health status go on slowly. Further understanding of concrete causes that promote maintaining of high mortality rates in different population groups is required. It becomes more evident that success in disease and mortality control can be achieved due to changes in lifestyles and attitude to health. The initiative must proceed to population because nowadays sources of danger for health and life are out of the medical influence: they are in nutrition, environment, habits, behavior and lifestyle. Therefore new policy of struggling with mortality requires concerned individual activity of population leading to environment and lifestyle improvement, health care, eradication of bad habits and implementation of good ones.

Significant mortality decrease can be achieved as a result of deep changes not only in individual behavior, but also in attitude of society, government to health care and people's life that should find reflection in rising of expenses for health care service. Solving regional problems it is necessary to focus on the nature of reproduction and loss of health as the most important criteria of economical and social well-being.

References

1. Beloborodov I.I. Demographic politics in the Russian Federation// Demographiya.ru. Publication Date 12/23/2010.
URL: http://www.demographia.ru/articles_N/index.html?idR=5&idArt=1825
2. Borisov V.A. Demographic situation in modern Russia// Demographic Researches #1. Publication Date 12/01/2005.
URL: http://www.demographia.ru/articles_N/index.html?idR=20&idArt=76
3. Government Report "About sanitary and epidemiological condition in the Novgorod Region in 2011"// Veliky Novgorod, 2012.
4. Demographic Yearbook of the Novgorod region, 2011. Statistical handbook / Novgorstat. - Veliky Novgorod, 2011. 184 p.
5. Health of the region's population and health priorities / edited by acad., prof. Shchepin O.P., corresp. member of RAMS, prof. Medik V.A. -M.: GEOTAR-Media, 2010. 120-139 p.
6. Kakorina E.P., Efimov D.M., Chemyakina S.N. Gender characteristics of the employable population mortality of the Russian Federation. Publication Date 06/08/2010.

URL: <http://www.mcfr.ru/journal/30/252/17753/20952>

7. Medik V.A. Role of health care system in implementing the concept of population policy at the regional level// Problems of Social Hygiene, Health and History of Medicine. 2009. № 2. 3-7 p.
8. International Statistical Classification of Diseases and Related Health Problems; Tenth Revision: In 3 volumes. Geneva: WHO, 1995. Vol.1, part 1-2
9. Main indices of population health and work of healthcare organizations in the Novgorod Region for 2011. Veliky Novgorod, 2012. 61- 64 p.
10. Problems and reserves of mortality decreasing in the Lipetsk region / Ivanova A.E., Semenova V.G., Sabgayda T.P., Evdokushkina G.N. // Social aspects of public health. 2008. № 1.
URL: <http://vestnik.mednet.ru/content/view/full/151/27/>
11. Mortality of the Novgorod Region population, 2010. Statistical yearbook / Novgorstat. - Veliky Novgorod, 2010. 166 p.
12. Statistical yearbook of the Novgorod Region, 2010. Statistical yearbook / Novgorstat. - Veliky Novgorod, 2011 - 321 p.
13. Shabunova A.A., Chekmareva E.A., Rybakova N.A., Morev M.V. Regional features of population mortality // Economic and Social Change: Facts, trends, forecasts. 2008. № 1. 105-116 p.
14. Shchepin O.P. Modern regional characteristics of public health and health of Russia / O.P. Shchepin, I.A. Kupeeva, V.O. Shchepin, E.P. Kakorina. - M., 2007. 276 p.

Olga Azovtzeva, Georgy Arkhipov, Svetlana Buzunova, Ekaterina Arkhipova

HIV INFECTION EPIDEMY AND ITS PREVENTION PRINCIPLES

Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia

Abstract

Prevention work is currently being given special attention in Russian Federation, as well as population healthy lifestyle, giving up bad habits, and increasing sanitary-hygienic awareness of population. HIV infection occurrence is increasing and becoming a threat to the country's national security. In the age breakdown major group is people under 30 (70.8%). Among the rest we can mark the increase of HIV detection among pregnant women, and the number of children born from HIV-infected mothers. If the questions of specific prevention, related to prevention shots, don't create considerable problems, other areas of medical prevention are so far left unresolved.

Key words: epidemic, HIV infection, prevention principles.

According to experts, nowadays, almost 30 years after the discovery of human immunodeficiency virus, more than 35 million of people got infected with it, and 18 million died of acquired immunodeficiency syndrome (AIDS), among which 1.5 million were children. In a number of countries this disease has already led to decrease of life expectancy by more than 10 years. Since AIDS affects mostly those able to work, this disease aggravates the social conditions of other family members, especially children, thus escalating the problems of poverty and social inequality in the society.

What had been before reported as only few cases of sophisticated disease now has turned into pandemic that is one of the most serious threats to the global progress of the 21st century. First information in CDC (Center of Diseases Control, Atlanta, USA) was received from the groups of New York and Los Angeles doctors, and it was about the cases of pneumocystic pneumonia and Kaposi's sarcoma in young male homosexuals. Type I human immunodeficiency virus was discovered by Luc Montagnier (Paster Institute, France) and Robert Gallo (Cancer National Institute, USA). First cases of the disease in our country were detected and described by V.I.Pokrovskiy in 1980-1981.

HIV infection epidemic that has appeared as disease of definite risk groups has turned into global crisis for all parts of the society. Even though the epidemic has covered the whole planet, its progression in different regions has its own specific characteristics, well-timed detection, study, and perception of which can help in applying correct approach in conducting effective countermeasures to the spread of epidemic. The experience acquired in Africa cannot be fully applied in Europe. European algorithms of actions have limited application in Russia, which, though entered epidemic later, but has a lot of national distinctive of HIV transmission routes, as well as medical examination, organization of medical aid, and social environment of diseased individuals.

Objective of current study is to define the characteristics and distinctive of epidemic expansion in Novgorod region, and to research the principles of its prevention organization.

Data and means of study. For this work we used materials of official statistics data presented by the Federal scientific-methodological center on HIV prevention and control. The statistics data on characteristics analysis of epidemiological and clinical distinctive of HIV epidemic expansion in Novgorod region were presented according to data of «Novgorod Center of AIDS prevention and control «Helper»», as well as data of «Novgorod Regional Clinic». Analysis of prevention measures for decreasing HIV expansion was conducted on the example of Russian Federation (RF).

Results and their discussion.

Overall number of HIV-infected citizens in RF reached 668 thousand in 2011 and keeps increasing by average of 60-90 thousand annually (Figure 1).

Russia is among the world leaders by the pace of increasing numbers of HIV infected people [2]. There's opinion being argued that real number of infected by virus can be considerably larger [3].

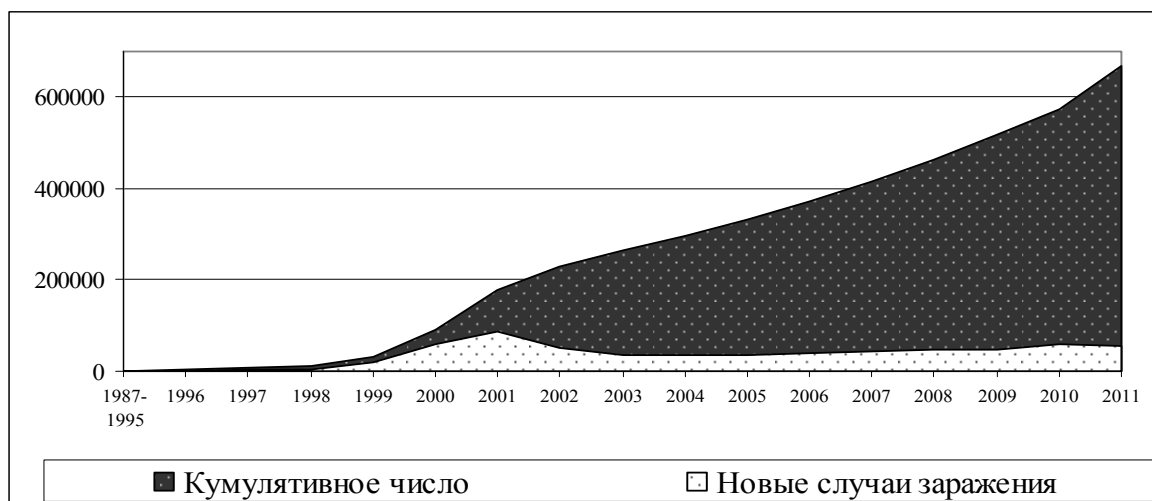


Fig. 1. Officially registered cases of contamination with HIV in RF.

In each of 7 Federal districts the virus expansion has its own patterns that correspond with different geographic and socio-economical characteristics. Novgorod Region is a part of North-Western Federal District (NWFD). The District has an area of 1,687,000 sq. km, which is 9.9% of overall Russia's territory. It includes 7 regions (Arkhangelsk, Vologda, Kaliningrad, Leningrad, Murmansk, Novgorod, Pskov), 2 republics (Komi and Karelia), Nenetskiy Autonomous District, and the city of St. Petersburg. District is categorized as demographically depressive. Immigration flow doesn't cover the natural decrease of population. For NWFD it is distinctive to have large flow of cargo turnover due to the presence of big sea ports, which, according to customs data, also is one of the reasons for transport flows of drugs [4].

The first case of HIV among Russian citizens in NWFD was registered in St. Petersburg in 1987 [5]. The period until 1995 can be called the time of slow HIV expansion, when only single cases would be registered. Infection used to spread only sexually, noting that two thirds of males would get infection through homosexual and bisexual intercourse. More than half of all infected individuals could be described as having risky sexual behavior. It was also observed that females have sexual intercourse with foreign citizen (mostly from African countries) [4].

First cases of HIV infection among the consumers of injected drugs were registered in NWFD in 1996, when in 7 cases the intravenous drug consumption was stated as the reason of contamination. In 4 cases HIV was diagnosed in citizens of CIS (Ukraine and Belarus). In the next 3 years the number of diagnosed with HIV was relatively low. However, the

proportion of injected drugs' users among those infected with HIV was increasing respectively [4].

The study on WHO methodology, express evaluation of the situation with intravenous drug usage, conducted in Saint-Petersburg by the group of specialists in 1998, showed that most largely used drug was heroin (60%), as well as heroin combined with opiate drugs from clandestine production [6]. The risk level of getting infection turned out to be extremely high among the consumers of injected drugs.

In Novgorod region, the first 3 cases of heterosexually transmitted HIV were registered in 1990. Next case was registered only in 1995.

Beginning from year 2000, HIV epidemic in NWFD and in Novgorod region as well has begun expanding very fast. As on 31.12.2011 in Novgorod region there was a total of 1588 registered people with HIV.

As can be seen from Figure 2, low-grade epidemic process of 1990-1999 period (there would be only 3-5 infected individuals to be registered annually), changed in 2000 with an approximate 10-fold increase, and the increase in 2001 was like never before and absolutely sudden — 230 people were diagnosed with HIV (mostly teenagers).

The analysis has shown that advantageous environment for epidemic process was gradually being created. One of them is a constant annual increase of drug users. One «accidental» infection in the young drug users' community could launch the chain reaction that was out of control. Soon, against the backdrop of parenteral transmission mechanism, sexual one started to increase significantly. The infection started expanding geographically, currently including 100% of all administrative territories of Novgorod region, whereas on in the end of year 2000, there were only 37.5%. Comparing to year 2000, the number of annually diagnosed with HIV in the next 8 years started to decrease. However it was definitely not due to the results of positive realization of aimed prevention measures, but more likely occasional phenomenon that doesn't reflect real current intensity of epidemiological process. In 2011 the new increase of registered HIV cases was marked in the region. Currently, the distinguishing characteristic for Novgorod region is that last year (2011) we observed the leap of registered cases only in the region, whereas in 2001 such leap was simultaneous in the whole region and Russia as a whole.

HIV morbidity rates in Novgorod region are 5 times higher than the average across Russia. The prevalence rate for HIV in the region was 205.3 per 100,000 in 2011, while the average European number was 43.6; this, experts argue, is already dangerous for the region economy.

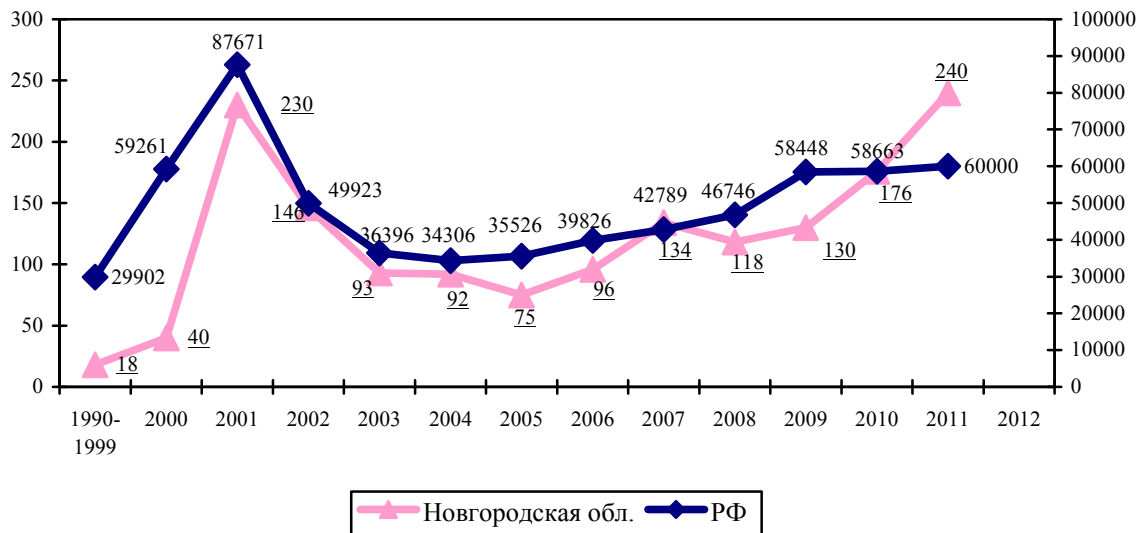


Fig. 2. The number of annually registered cases of HIV in 1990-2011, Novgorod region and Russian Federation, respectively (pink – Novgorod, blue - RF)

The reason for such an advance has not been defined. A number of reasons have been proposed:

a) more precise registration of HIV-infected patients in the city, where the problem has been taken under a serious attention and there was a start of equipping laboratories and training specialists;

b) the flow in of high number of injected drugs and not sufficient work of related agencies;

c) geographical characteristics of the region, which is close to two metropolitan cities (Moscow and Saint-Petersburg);

d) unfavorable social environment, that destabilizes usual rhythm of city life, as there is an increase in number of asocial inhabitants;

f) migration processes.

It seems that all these reasons play their own role, but it is highly difficult to evaluate the importance of each factor.

The analysis of epidemic development in the region for the last two decades has shown the change in transmission pathways and the dominance of different age groups within the morbidity structure. Currently there has been essential increase in the importance of sexual path of transmission, which replaces injected contamination of drug users (Fig. 3).

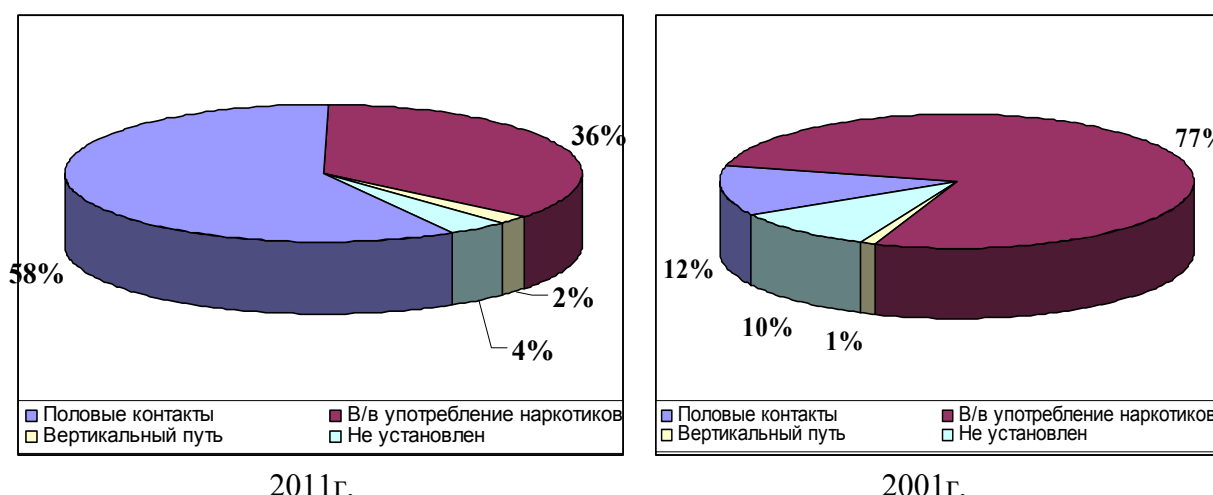


Fig. 3. Transmission pathway based distribution structure of HIV infected individuals (Blue – sexual contact, brown – intravenous drug use, light blue – vertical path, yellow – not defined)

For the last 5 years sexual pathway is the reason for transmission in 5 times more cases than drug-related ones. In age structure, the dominance of people under 30 (70.8%) can be observed.

When correlating age categories of HIV-infected among first-time diagnosis, during 2000-2001 period (on epidemic peak), with the situation in 2011, our attention is drawn to the shift into older age groups (the percent of 30-39 age group has increased up to 21.7%). Thus, in 2001, the portion of this age group was 6.56%, and in 2011 — already 21.7%.

The tendency of active involvement of women into epidemic can also be observed. In 2001, the percentage of diagnosed infected women was 23.4%, and in 2011 — already 55.6%. They are involved in every second case of contamination, which is also evidence of heterosexual pathway of transmission. More than 90% of HIV infected women are of fertile age, which brings the problem of mother-child HIV transmission during the period of pregnancy and birth.

The prevention of perinatal HIV transmission is multi-step, multi-profile process, which includes the access of a woman to early pre-birth examination, acquiring information about the infection, consulting on HIV transmission paths and its prophylaxis, prescription of ARV medications to mother and child, and control of them being taken, as well as socio-psychological support of patients and their families [7]. During recent years the positive shifts in perinatal HIV transmission are observed in Novgorod region. More than 80% of HIV-infected women, who wish to save the pregnancy, register in female counseling centers (Fig. 5).

The increase of HIV incidence among pregnant women has been marked since 2002, as well as the number of children born from HIV-infected mothers. Perinatal HIV infection, which is one of the major causes of child AIDS, is becoming more vital in our country, with the respect to the increase in numbers of births performed by women of this category. (Fig.4).

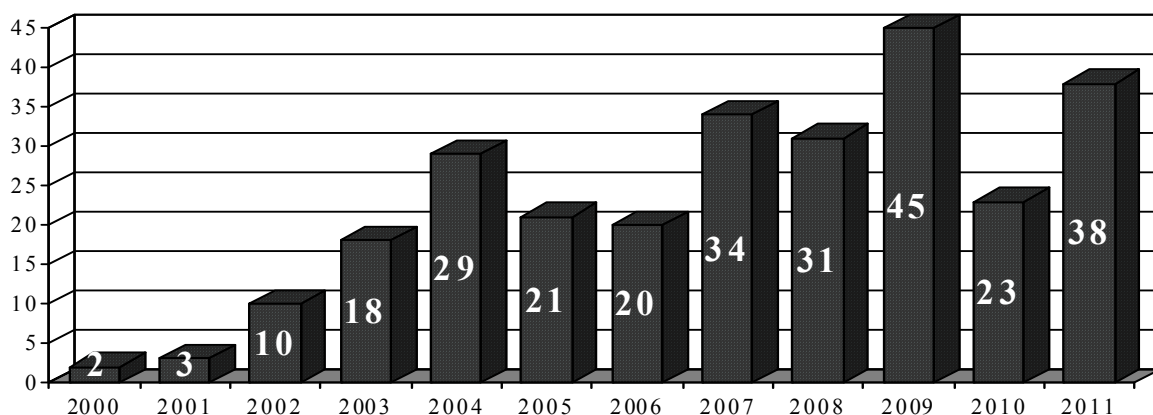


Fig. 4. Dynamics of births by HIV-infected mothers (absolute)

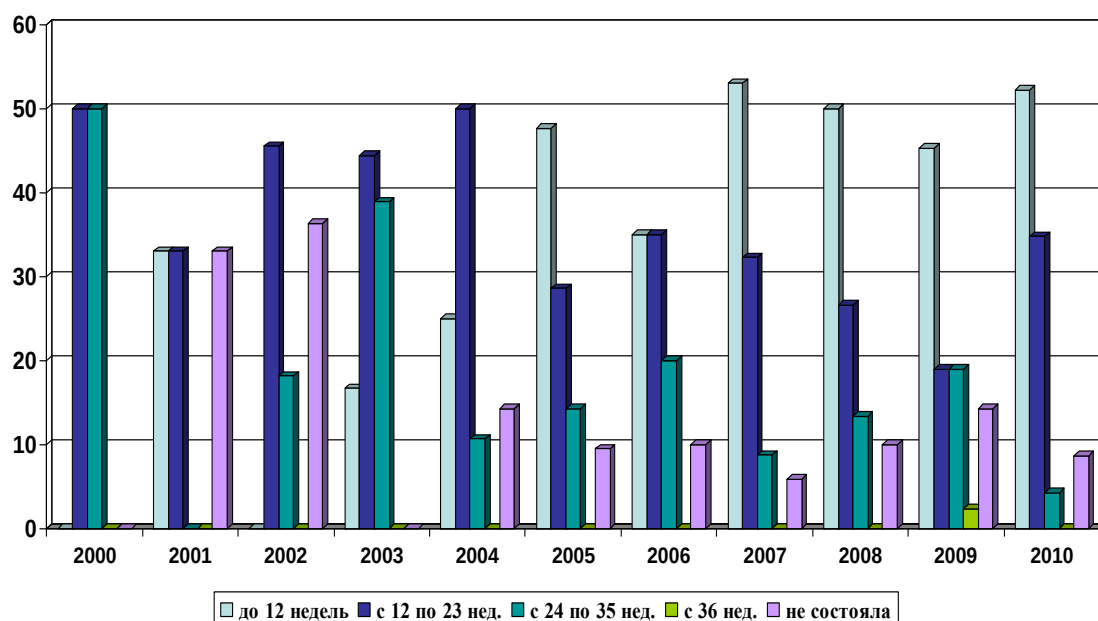


Fig. 5. The time of registering HIV-infected women who gave birth

Overall number of children born from HIV-infected mothers in the region is 272. 240 of them have been de-registered. In 2011, 38 children were born from HIV pregnancies. The prophylaxis of vertical transmission was conducted in 89.5% of cases (three-step — 28 cases, during labor + to a child — 5 cases, only to a child — 3 cases, was not performed — 2 cases).

In 2011 3 children were diagnosed with HIV (all-time record is 19), 13 are under

dispensary observation, specific treatment is given to 7 (all in need).

In Novgorod region the rate of HIV transmission stays high (8.4% in 2011). For the record: in European countries this index is never higher than 1% [8].

Such cases are related to: a) high level of female drug users' contamination in 1999-2002; b) social status of these women; c) the absence of prenatal observation and treatment of STDs; d) with «deceitful» means of keeping the lactation. These conditions demand further improvement of complex measures and work with HIV-infected women on the level of media, counseling centers during pregnancies, and maternity clinics with a compulsory course of chemoprophylaxis, that prevents children getting infected by the virus.

Thus, epidemic increase of HIV infection morbidity is still increasing in Novgorod region. Most often HIV infection affects young people aged 15-30, and in recent years there has been an increase of registered cases with individuals who are older.

In recent years we are also observing the expansion of HIV infection in socially favorable groups with the activation of sexual transmission, as well as increasing number of infected women and children born from them. The mother-child transmission rate in Novgorod region is still relatively high, and due to prevention measures it is lower than average RF figures, but still higher than ones in Western Europe.

Every year there is an increase in number of individuals with advanced phase of HIV infection, and they often already have severe secondary diseases and infections, - that requires more active clinical assessment, hospital admission, through diagnostics, prescription of ARV and longer treatment.

Therefore, it is necessary to implement instant prevention measures that give sensible effect. It is impossible to receive necessary results without applying modern methods of managing such work [9].

Proper management of prevention measures in countries of Northern Europe (sexual education, teaching safe sex methods, distribution of free condoms among risk groups, as well as government policies on pricing contraception, later involvement into sexual activities, changing risky behavior, syringes' exchange program, etc.) has led to positive results: the number of those diseased with AIDS has significantly dropped. [10].

More than 25-year old history of HIV infection prophylaxis in the world clearly shows that the epidemic can be stopped and even pushed back, if all-around adequate prevention measures are performed on time. Biggest priority should be given to those prevention programs directed on the groups that with higher probability may be infected with HIV or may participate in HIV transmission.

The expansion of HIV can be decelerated by the means of changing social behavior of the population: decreasing the number of sexual partners or partners on intravenous drug use, use of condoms during sex, using sterilized equipment for intravenous injections. The most effective way to limit the epidemic while not having vaccine is the decrease of risky behavior.

When organizing the work on HIV prevention it is necessary to use principles of public health care, which are directed on improvement of health and prevention of the disease, both on local and national level, with the use of health care workers, public health care specialists, as well as of health education, kindergarten teachers, school teachers, scientists, community representatives and political activists.

All prevention programs should be based on the objective evaluation of the situation with these diseases as well as on the basis of sociological surveys conducted in different social groups of the community. In order to eliminate negative reaction from the part of the community that perceives safe sex propaganda as the corruption of the youth, it is very important to take into account the characteristics of Russian mentality, traditions with the prevalence of religious categories, specific attitude to the winged sentiments, exceptional value of family relationships.

In order to for prevention programs, first of all, it is necessary to define the needs of its effective implementation. Only after discovering and marking existing needs it is possible to make right decisions, as well as properly plan and evaluate the effectiveness of the measures.

The major tools for evaluating the needs of any territory are methods of epidemiological statistics, epidemiological and socio-hygienic studies of target groups of the society.

As the result of the studies the opinion of the whole society or definite social group on the studied program, perception of their own health, the level of awareness about HIV infection, risk factors, - is revealed/

Outreach and awareness-raising programs related to the prevention of HIV infection, STDs, drug use, are inalienable part of state program directed on strengthening the health of the whole population, and this is actually included into the sphere of hygienic upbringing and education of the citizens. The end objective of such programs is to form the perception of the healthy life style, skills that are needed for it, preventing such diseases as HIV infections, STDs, virus hepatitis with parenteral transmission, drug use, etc.

The methods of conducting prevention work include:

The conduction of educational seminars on the issues of epidemiology, prophylaxes, treatment, social aspects of HIV infection, drug use, for the local media workers, including TV and radio reporters.

- The publications of the materials in the local press (articles, interviews, open letters, reports, etc.) on the problem of HIV/AIDS with the emphasis on the issues of the epidemiology and prevention the acquisition of HIV infection.

- The preparation of radio materials on the issues of HIV infection prophylaxis among various population groups, primarily the youth and drug users, and providing its broadcasting on the local radio channels,

- Organization of broadcasting videos and theme programs about HIV infection and drug use prevention on the channels of local TV.

- Creation of special TV stream or series of programs dedicated to the matter of discussing various aspects of HIV/AIDS issues, as well as drug use, - all with focusing on young viewers.

- Preparing informational data on different aspects of HIV infection issues and placing it onto computer network.

- Preparing and conducting lectures, talks, round tables, discussions among students of high schools, technical schools, technical colleges, and universities, on the issues of HIV infection.

- Teaching patients in medical institutions, narcological departments, virus hepatitis departments of infection clinics, the measures and methods of preventing the contamination with HIV infection.

- Drawing youth leaders, celebrities, and former drug addicts to the problem of HIV.

- Using popular media and various youth meetings.

- Prophylaxis based on the principle of equality, when «peer teaches peer»

Prevention of HIV infection disease is impossible without effective influence of the media on the developing mind of teenagers and youth, who are starting their active live, which includes sexual activities that are easily influenced by the existing informal behavioral stereotypes. At the same time the quality and the level of involvement of adults in this process (at home, at school, university, etc.) are important.

We have various media measures in our arsenal that we can use to influence the teenager as part of healthy lifestyle and drug-free propaganda.

The most effective and prioritized here is television, since it is considered to cover larger audience. Regular rating surveys of electronic media let us choose the time and programs with the largest audience. It is also important that with the means of TV we can present the information in any format.

Propaganda of the motto «NO to drugs and AIDS» in various forms of presenting the information, in order to prevent diseases is necessary. It can be instant surveys, round table, talk-shows or interview built as answering the questions of the audience about AIDS and other STDs. Maximum effect from the propaganda is only possible under the condition of adequate forms and influence measures targeted on various community groups.

With regards to that, it is necessary:

- to conduct sociometric studies on defining and characterizing risk groups, as well as factors influencing the perception of various information;
- to acquire targeted influence on risk groups by the means of special choice of form and measures for informational exposure with the regards to age, social status etc.;
- to provide complex implementation of all forms of propaganda within the framework of agitation campaigns, that usually go simultaneously with large scale youth events (“Scarlet Sails”, Knowledge Day, various festivals) and with the relation to World AIDS Day, AIDS Victims Day, etc.
- Wide range involvement of representatives of different subcultures, on the contest basis, when creating printed, video, or other materials;
- Wide range involvement of teenagers and young adults into HIV prevention and propaganda programs.

Only state policy and proper management can directly affect risky behavior of concrete individuals.

In new century HIV/AIDS, together with some another socially important infections, has turned into the global scale problem, that is now interdisciplinary and is dealt with on state level. RF government Ordinance from 9th of October, 2006 No. 608 indicates that.

The total contribution of Russia into the solving global problems related to the expansion of infectious diseases is more than \$450 million. Vast portion of this money was directed to the fight against HIV/AIDS [1].

Most important of them are:

- Prioritized national project on 2007-2011 with total volume of financing 42 billion rubles;

— Compensation to the Global fund against AIDS, tuberculosis, and malaria - \$217 million given for realization of projects in Russia;

— Financing within the amount of 1 billion rubles in 2008-2010 for the research in the field of developing the vaccine against HIV infection and creating the mechanism of coordinating the research in the region of Eastern Europe and Central Asia.

Within the framework of cooperation with WHO there's an ongoing development of new prevention strategies, treatment, and control of HIV infection expansion on different direction, including the development of monitoring system and treatment evaluation, as well as helping people living with HIV, supervision of HIV infection epidemic, and in the field of monitoring the resistance to the ARV medications [1].

Special attention is given to the development of national standards and clinical guidelines on HIV infection treatment, prophylaxis and treatment of opportunistic diseases, concomitant infectious pathologies, such as HIV combined infections and tuberculosis, HIV and B/C hepatitis etc., in the accordance with international criteria, and their implementation into practical medicine [1].

The realization of measures aimed to improve the prevention of mother-to-child HIV transmission is also being run in cooperation with UNICEF. These measures include the development of regulatory documents, training medical and social workers, implementation of effective models on organizing medical and social aid to HIV-infected pregnant women, as well as mothers and children in regions of Russian Federation [1].

Currently, prioritized national project «Health» for years 2009-2012 is major tool for fighting HIV epidemic in Russia.

Its major objectives are:

1. Involvement of all those infected with HIV and who are in need of treatment, into ARV therapy, in accordance with approved standards of performing medical aid;
2. Conducting wide range monitoring of the situation on HIV infection in Russian Federation. Performing not less that 22 million diagnostic texts on HIV annually;
3. Improving access to the prevention, diagnostics, and treatment of HIV-infection;
4. Providing maximum coverage of HIV-infected individuals with dispensary observation;
5. Presenting the full course of preventive treatment to all pregnant women infected with HIV, with the aim of child contamination prophylaxis;
6. Development of inter-sectoral cooperation with the aim of fighting HIV infection epidemic, as well as one of B and C virus hepatitis;
7. Coordination of measures on fighting HIV infection epidemic within the framework of

prioritized national project, the project of Global Foundation and World Bank;

8. Development of programs on HIV infection prophylaxis, especially in vulnerable population groups, as well as the programs decreasing the stigma and discrimination of those who have HIV;

9. Expanding the participation of civic society in fighting HIV infection epidemic in Russian Federation.

Successful and effective realization of prioritized national project objectives on prophylaxis, diagnostics and treatment of HIV infection in Russia will let essentially influence epidemiological process, sufficiently decrease the number of new cases of the disease and minimize negative socio-economical consequences.

Conclusion. There's still an epidemic increase of HIV infection morbidity in Novgorod region. Most commonly HIV infection strikes young ones aged 15 to 30. In recent years more numbers of older people being diagnosed can be marked.

Recently we are observing the expansion of HIV infection in socially favorable population groups with the activation of sexual pathway of transmission, an increase in women being infected and with the respect to that, a number of children, born from HIV infected women. In Novgorod region the mother-to-child HIV transmission rate is kept relatively high, which is, due to the prophylaxis measures is lower than average index in RF, but is higher than in countries of Western Europe.

Annually there's an ongoing increase in number of people with advanced phases of HIV infection, often with severe secondary diseases and infections that demand more active dispensary registration, hospitalization, thorough diagnostics, prescription of ARV and longer treatment.

In order to decrease the expansion of HIV infection in RF, it is necessary to implement instant prevention measures that give sensible effect. Most priority should be given to the involvement of prevention measures that are directed on those population groups who are most probably may be infected. The organization of prophylaxis measures in RF is conducted on a state level – this can be seen on the example of government Ordinance #608 from October 9, 2006.

The work above has been conducted within the framework of implementing FTP “Human resources in the field of science and educational research in innovative Russia for 2009-2013”.

References

1. Onishenko G.G. HIV infection – the problem of the mankind // HIV infection and immunosuppression, 2009. – Vol.1.-#1. – p.1-5.
2. Pokrovskiy V.V., Ladnaya N.N., Sokolova E.V., Buravtzeva E.V. HIV infection // Informational bulletin. — M., 2008.— # 31.— 24 p.
3. Pokrovskiy V.V. HIV/AIDS epidemic in Russia: tendencies, lessons, major issues and opportunities for expanding responsive actions // Report on XVI International conference on AIDS.— Toronto, Canada, August 13-18 2006.
4. Smolskaya T.T., Ogurtzova S.V. HIV infection epidemic condition in North-West Federal District, 1987-2009: a review. / HIV infection and immunosuppression, 2011. –Vol.3.-#1. – p.27-36.
5. Rakhmanova A.G., Vinogradova E.N., Voronin E.E., Yakovlev A.A. HIV infection. - SPb., 2004- 693 p.
6. Teaching HIV/AIDS prevention strategies among intravenous drug users in RF: seminar materials / Doctors Without Borders (MSF-H). - M., 1998. URL: <http://www.narcom.ru/ideas/common/45.html> (message date: 01.11.2010 г.).
7. Rakhmanova A.G. Antiviral therapy of HIV infection. Chemoprophylaxis and HIV infection treatment in pregnancy and new-born ones. - SPb: CRI SPbSU, 2001.- p. 76-88.
8. Recommendations for use of antiretroviral drugs in pregnant HIV infected women for maternal health and interventions to reduce perinatal HIV transmission in the United States // US Centers for Disease Control and Prevention. July 8, 2008. 98 p.
9. Vyalkov A.I. Medical prophylaxis: modern technologies: a manual.— M.: Geotar-Media, 2009.—231 p.
10. Taitz B.M. Organizational and clinical framework for improving infectious service under the condition of healthcare reforms. - SPb.: SSZ, 1998-504 p.

Elena T. Carbone, David R. Buchanan

THE UTILITY OF COMMUNITY-BASED PARTICIPATORY RESEARCH TO ADDRESS CHRONIC DISEASES

University of Massachusetts, Amherst, USA

Целью данной статьи является описание и обсуждение использования исследований с вовлечением местного населения для разработки профилактических программ, направленных на решение значительных проблем в области общественного здравоохранения, актуальных для современной России. Для повышения значимости и эффективности результатов исследование с участием местного населения максимально вовлекает местное население в процесс исследования, от определения приоритетных проблем здоровья населения, до выработки политических рекомендаций. В статье сравниваются традиционное исследование в области здоровья с принципами исследований с вовлечением местного населения, и выявляются преимущества и недостатки обоих видов исследований. В статье также анализируются четыре примера исследования, где использовались принципы и методы исследования с вовлечением местного населения.

Ключевые слова: Местное население, исследование с вовлечением местного населения, неинфекционные болезни, общественное здравоохранение.

Abstract

This paper describes the use of community-based participatory research (CBPR) to inform the development of prevention programs to address significant health priorities in Russia. CBPR seeks to maximize involvement of populations in all stages of the research process, from identifying priority health problems through policy recommendations. The paper compares steps in traditional health research with CBPR approaches, and highlights their respective strengths and limitations through the use of three case studies.

Key words: community, community-based participatory research, non-communicable diseases, public health

Significance of chronic diseases

One of the most significant challenges facing modern health care systems globally is a result of the “epidemiological transition,” the eclipse of infectious diseases by non-communicable diseases (NCDs). Infectious diseases are caused by the invasion of microbial agents, in response to which the medical sciences have developed highly effective means of control. For chronic diseases such as cancer and heart disease, however, onset and disease progression have been linked largely to lifestyle behaviors, such as smoking and diet, and the medical sciences have yet to develop effective means to cure them. Consequently, attention has shifted to prevention, which has led researchers to focus on the causes of unhealthy behaviors. The lack of success in developing effective means to change human behavior has led researchers to employ alternative research strategies to discover ways to improve population health.

The need for developing effective behavioral interventions

Globally, the leading causes of mortality are typically heart disease, cancer and strokes. Researchers have identified the “actual causes of death” by estimating the number of deaths that could be attributed to various underlying causes [1, 2]. In this view, the important question to ask is, “*What caused the heart attack?*” In such analyses, researchers determined that the “actual” leading causes of morbidity and mortality are smoking, obesity, physical inactivity and excessive alcohol intake, all of which can be characterized as behavioral risk factors. Based on these analyses, health care systems need to develop and deliver effective interventions to change health behaviors to achieve improvements in population health.

Traditional research methods have met with limited success in changing people’s behaviors. Interest in community-based participatory research (CBPR) has grown in recent years in seeking to overcome limitations of previous research efforts. CBPR is based on the

premise that the people who engage in unhealthy behaviors are in the best position to know what will enable them to change their behaviors.

Definition and purpose of CBPR

CBPR is defined as “a collaborative approach to research that equitably involves... community members, organizational representatives, and researchers in all aspects of the research process” [3]. Israel and colleagues compiled a set of key principles to guide this research approach (Box 1).

Based on this definition and principles, the key purposes of CBPR are to:

- 1) demonstrate respect for community autonomy,
- 2) elicit ideas from community members for process expected to change participants positively as a result of their participation. These purposes operate simultaneously and are mutually potential health interventions, and
- 3) strengthen participants’ capacities to gain control over health conditions [4]. CBPR is thus a way to fulfill an ethical obligation, a method for identifying new interventions and a social reinforcing.

Box 1. Key CBPR Principles [3]

1. Recognizes community as a unit of identity.
2. Builds on community strengths and resources.
3. Facilitates collaborative partnerships in all research phases.
4. Integrates knowledge and action for mutual benefit of all partners.
5. Promotes a co-learning and empowering process.
6. Involves a cyclical and iterative process.
7. Addresses health from both positive and ecological perspectives.
8. Disseminates findings and knowledge gained to all partners.

Steps in CBPR research process

Traditional health research begins by identifying a significant health problem and formulating causal hypotheses (see Table 1). Traditionally, priority health concerns are identified based on epidemiological data on the leading causes of morbidity and mortality. In CBPR, identification of important health problems starts with the community. For example, where epidemiologists may cite smoking as the leading cause of mortality, community members may be more concerned about illegal drug use. Common methods to gain community input include: partnerships with local community-based organizations (CBOs) and non-governmental organizations (NGOs); community forums; key informant interviews; focus groups; neighborhood surveys; and the formation of Community Advisory Boards (CABs).

The next step in conventional health research is to design the study and seek funding. Traditionally, the design is selected by identifying the most scientifically rigorous method, with randomized controlled trials (RCTs) at the pinnacle of the hierarchy. In the US, federal funding is generally allocated to studies that promise to deliver the most rigorous research results. In CBPR, community members have an equal voice in the choice of research design.

Table 1

Comparison of Traditional Research and CBPR Approaches (adapted from: [11, 12])

Traditional Research Approach	CBPR Approach
1. Identify problem and state hypotheses based on epidemiologic evidence and funding priorities.	1. Identify health concern(s) with community.
2. Design study based on scientific rigor and feasibility. Seek funding primarily for research expenses.	2. Community involved in study design and proposal submission.
3. Measurement instruments adopted or adapted from other studies and tested primarily with psychometric analytic methods.	3. Measurement instruments developed and pilot tested with community input.
4. Recruit sample population and randomize groups based on scientific issues and “best guesses” about recruitment and retention of participants.	4. Community provides guidance on recruitment and retention strategies.
5. Run treatment and comparison interventions based on literature and theory.	5. Design and implement intervention with community guidance.
6. Compare outcomes and draw conclusions based on statistical analyses.	6. Researchers and community members analyze and interpret data.
7. Researchers report findings, make policy recommendations, and publish in peer-reviewed journals.	7. Community assists researchers with translation and dissemination of findings and policy recommendations.

In CBPR, the types of data to collect and analyze are decided in consensus discussion with the community. Reliance on community input in CBPR has shifted the traditional focus on problems and negative dynamics, to identifying community strengths, assets and resiliency factors that enable members to overcome adverse social circumstances.

Measurement design is the next step in the research process. Traditionally, measurement instruments with known validity and reliability are adopted or adapted from other studies. With CBPR, the community provides input into developing and pilot testing measures, thus ensuring the language and potentially unique social dynamics of the target audience are addressed.

Recruiting participants and implementing a retention strategy is Step Four. Traditionally, attracting community members is based on specific criteria and the ability of

the research staff to recruit eligible candidates to enroll. With CBPR, the community provides guidance about recruitment and retention strategies. For example, a Community Advisory Board can identify important local social organizations and arrange introductions with their “gatekeepers” to facilitate access. CABs can also advise where and when to recruit people, how to gain community leaders’ support, which sites to target, and data collection strategies to use.

The next step is to design and implement the intervention. Traditionally, researchers develop the intervention based on a literature review and relevant theories. With CBPR, the community is actively involved from the outset. Here is where many people see that CBPR holds its greatest promise [5]. CBPR is based on the premise that community members have a better understanding of the forces affecting their lives than researchers; therefore, they have better ideas about what will enable them to change their unhealthy behaviors. In CBPR, the key tenet is to ask community members what they see as motivating their decisions. For instance, what do they think leads to the current overconsumption of calorie-dense foods, and what do they think can be done about it?

The final steps in the research process are to draw conclusions, make policy recommendations, and disseminate findings. Traditionally, researchers conduct multilevel statistical analyses and report findings in scientific journals. With CBPR, community members work with researchers to analyze data, interpret its meaning, and make it relevant. Translating statistical analyses into lay audience terms and disseminating findings to community members are crucial parts of the CBPR process.

Examples using a CBPR approach

Nutrition is a major risk factor for NCDs. CBPR is useful not only to understand underlying issues related to poor nutrition (why people are not eating a healthy diet) and how to promote better habits, but it is also useful to develop more effective programs to change diets. We present three nutrition-related examples to illustrate how CBPR approaches have been used in the research process. The first example is a diabetes self-management study [6]. The purpose of the study was: 1) to examine behavioral self-management practices, knowledge, and beliefs of Latino patients with type 2 diabetes and their health care practitioners, and 2) to inform development of a diabetes intervention. This cross-sectional study was conducted at a community-based health clinic. In this study, we conducted two practitioner focus groups (one with physicians and one with clinic staff) and four patient focus groups. Interview findings revealed important gaps in knowledge about diabetes causation and self-management. For instance, we discovered that diabetes was prevalent not only

among patients' families, but also in extended families and entire neighborhoods. From this, we realized that, to be successful, new interventions were needed to address a full spectrum of diabetes conditions and involve individual patients, families and the community.

Using a CBPR approach strengthened the research process at two points: Step 1 (identify the health concern - which was more than just diabetes) and Step 5 (intervention design and implementation – involving family, friends and neighborhoods).

Example two is from a three-year intervention study to decrease overweight and obesity among elementary school students [7]. The intervention community was selected based on an established relationship between key community-based organizations and the researchers. Control participants included children attending public elementary school in three communities. A total of 1696 individuals participated.

Using a CBPR process, intervention activities were developed to influence all aspects of an elementary schoolchild's day. Community members worked with researchers to design and plan the study and collect data (Step 2). Interactions included meetings, focus groups, and key informant interviews that led to the formation of advisory councils that were active throughout the study. In addition, many community groups and individuals were engaged in implementing the intervention (Step 5).

At the end of the first year, several policies were developed to promote and sustain change (Step 7), including a school wellness policy, union contract negotiations to enhance school food services, expanded pedestrian safety and environmental policies, adoption of a healthy meeting and event policy, and a city employee wellness benefit. This study effectively decreased BMIs in a group of high-risk children through a multi-faceted environmental change approach that involved the community, schools, families, and students. Researchers also helped the intervention community secure over \$1.5 million to continue intervention activities.

The third example is from an obesity prevention program for 11-14-year old Latino and White youth [8]. The five-year, quasi-experimental study took place in after-school programs in two low-income communities, with an eight-week curriculum. One full year was devoted to formative work, followed by a four-year community-based intervention. At the end of the eight-week intervention, we found significant increases in key behaviors such as food label reading and awareness of food marketing strategies in the intervention group relative to the control group.

Use of a CBPR approach in the formative year of the study resulted in numerous benefits. We learned that, to keep the attention of young adolescents, the intervention needed

to involve friends, be fun and engaging, include music, and incorporate the use of games and competitions (Step 2: study design). In Step 3 (participant recruitment), we learned that word-of-mouth by the adolescents and teachers was a powerful enrollment strategy. From the focus group findings, we discovered the need to revise the language and format of some measures to improve relevance and comprehension (Step 4: design measures). Finally, part of the formative work involved auditioning and recruiting adolescents from the community to write, perform and choreograph the theme song. Their words, musical preferences, and energy laid the foundation for the intervention curriculum (Step 5: design and implement intervention).

By actively engaging community members in the knowledge generation process, all three case studies met the goals of the CBPR methodology. They illustrate how to bridge research and practice and extend the benefits of both.

Discussion

As with any research method, the use of CBPR can be challenging, but the benefits to communities and researchers far outweigh the challenges. CBPR can lead to increased acceptance of an intervention program by community members, greater sensitivity to cultural and social norms, increased motivation to make healthful behavior changes, enhanced empowerment, and increased chances for meaningful results [3]. An important additional benefit is that through participation, community members learn how to gain access to resources, effect changes in environmental conditions and social policies, and work together to build social solidarity and equity [3, 9].

For researchers, the use of CBPR approaches can lead to novel intervention strategies, enhanced recruitment and retention, increased validity and reliability of measurements and findings, strengthened research and program development capacity, increased sustainability, and increased chances for relevant and meaningful results [10].

Before engaging in CBPR, there are a number of points to consider [11]. First, it is critical to ask: *“Is CBPR the right fit for this community and for this research?”* If the answer is yes, the next step is to conduct preliminary research in the community to learn about the area, economics, politics, school and health care systems, etc. Then, it is important to conduct additional research to identify community norms and values, what the community takes pride in, and who the key players are. The next step is to conduct key informant interviews and meet potential partners. Finally, it is never too early to plan for sustainability to determine how the program can be structured to continue beyond the grant for the good of the community. This is also a collaborative process, where the community has an active role in structuring sustainable programs.

The rise of chronic diseases challenges traditional medical approaches to identifying and controlling the causes of disease. Can we discover the causes of smoking using the same methods that scientists used to discover the causes of AIDS? Is the purpose of such research to develop effective means to control people's behavior in the same way that medical researchers are developing effective ways to control the replication of HIV? Or is it more important to provide people with tools to see how best to lead their lives? CBPR provides an important alternative approach to health promotion that recognizes the intrinsic capacity of people to choose what they think is important and to live their lives accordingly.

References

1. Mokdad, A.H, Marks, J.S, Stroup, D.F, Gerberding, J.L. Actual causes of death in the United States, 2000. *Journal of the American Medical Association*. 2004; 291:1238-1245.
2. McGinnis, J.M, Foege, W.H. Actual causes of death in the United States. *Journal of the American Medical Association*. 1993; 270 (18):2207-12.
3. Israel B., Schulz A., Parker E., Becker A. Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health*. 1998; 19:173-202.
4. Buchanan, D.R, Miller, F.G, Wallerstein, N. Ethical issues in community-based participatory research: Balancing rigorous research with community participation in community intervention studies. *Progress in Community Health Partnerships*. Summer 2007;1 (2):153-60.
5. Minkler, M., Wallerstein, N. Introduction to CBPR: New Issues and Emphases. Chapter 1 in Meredith Minkler and Nina Wallerstein (Eds.), *Community Based Participatory Research for Health*, 2nd edition. Jossey-Bass, San Francisco, 2008: pp. 5-24.
6. Carbone, E.T, Rosal, M.C, Torres, M.I, Goins, K.V, Bermudez, O.I. Diabetes self-management: Perspectives of Latino patients and their health care providers. *Patient Education and Counseling*. 2007; 66(2):202-10.
7. Economos, C.D, Hyatt, R.R, Goldberg, J.P, Must, A., Naumova, E.N, Collins, J.J, Nelson, M.E. A community intervention reduces BMI z-score in children: Shape Up Somerville first year results. *Obesity*. 2007;15(5):1325-1336.
8. Anliker, J., Carbone, E.T., Hutchinson, L. SPIN: Strength and Power in Nutrition (8 Sessions) and Educators' Manual. University of Massachusetts Department of Nutrition and Extension Nutrition Education Programs, 2007.
9. Viswanathan, M., Ammerman, A., Eng, E., et al. Community-based Participatory Research: Assessing the Evidence. Evidence Report/Technology Assessment, No. 99 (Prepared by RTI-University of North Carolina Evidence-based Practice Center under Contract No. 290-02-0016). AHRQ Publication 04-E022-2. Rockville, MD: Agency for Healthcare Research and Quality. July 2004.
10. Schensul, S.L. Science, theory and application in anthropology. *American Behavioral Scientist*. 1985; 29:164-185.
11. The Examining Community-Institutional Partnerships for Prevention Research Group. *Developing and Sustaining Community-Based Participatory Research Partnerships: A Skill-Building Curriculum*. 2006. Accessed January 11, 2012, www.cbprcurriculum.info
12. Gliner, J.A, Morgan, G.A, Leech, N.L. Research Methods in Applied Settings: An Integrated Approach to Design and Analysis, Second Edition. New York: Routledge, 2009.

Sally A. Linowski¹, Gloria T. Di Fulvio

AN INTERVENTION TO DECREASE HIGH RISK DRINKING AMONG COLLEGE STUDENTS

*University Health Services, University of Massachusetts, Amherst¹, USA
Department of Public Health, University of Massachusetts, Amherst, USA*

Abstract

This report describes the results of an intervention to reduce alcohol abuse among college students. Participants were college students mandated to a Brief Alcohol Screening and Intervention for College Students program and a randomly selected comparison group of drinkers. A total of 1390 (67%) students in the program and 508 (61%) students in the comparison group completed surveys at baseline and six-month follow-up. The results show that the program was effective in reducing drinking especially for male college students.

Key words: Alcohol, Health Education, Community Health

Introduction

The consequences of heavy drinking by young people, including 18-24 year olds enrolled in college, continue to raise serious public concerns. In the US, 1,825 college students die from alcohol-related unintentional injuries; 599,000 experience unintentional injuries; 696,000 suffer assaults; and 97,000 cases of sexual assault and acquaintance rape are reported each year [1]. Binge drinking, defined as 4 or more drinks in a sitting for women and 5 or more drinks in a sitting for men, is associated with an increased risk of academic, interpersonal, disciplinary, and health problems [2, 3]. Based on this measure, nearly 50% of males and 36% of females on college campuses in the US engaged in heavy episodic drinkers in 2004 [3].

Evaluations of interventions intended to reduce drinking and associated harms are urgently needed to guide college administrators in implementing effective programs. Research has shown that brief motivational enhancement strategies are effective in reducing alcohol consumption and related consequences [4, 5, 6-11].

The Brief Alcohol Screening and Intervention for College Students (BASICS) is a prevention program designed for college students ages 18 – 24 who drink heavily and have experienced alcohol-related problems. The program uses cognitive-behavioral skills training, norms clarification and brief motivational interviewing [4].

Study Design

The purpose of the current study was to determine the effectiveness of the BASICS program for college students. The study employed a quasi-experimental design to determine

whether the program resulted in reductions in drinking and in consequences among program participants.

Recruitment and Participants

Students who violated a campus alcohol policy were mandated to attend the BASICS program. In total, 2672 undergraduate students participated in the program. Each participant was invited to be part of a confidential evaluation. Of all students referred to the program, 95% (n=2,490) consented to participate in the evaluation. Of the 2490 who agreed to participate, 378 were removed from the dataset because they were either repeat offenders of the campus alcohol policy (n=378) or because they self-referred to the program (n=47), resulting in a total n=2065 eligible for this study. Of those eligible, 1390 (67%) completed the six-month follow-up survey.

A random sample of undergraduates was selected for the comparison group. The sample was stratified to match the demographic characteristics of the intervention group, by gender, class year, ethnicity, and residential status (on or off campus). A total of 1490 students were invited to participate in the comparison group. Sixty-one percent (n=908) of those invited agreed to participate, which consisted of two online surveys with the same drinking measures as those used in BASICS. Inclusion criteria for the comparison group included a minimum age of 18 years, a measure screening for high-risk drinking, and no previous involvement in the BASICS program. Seventy-one percent of those who agreed to participate (n=648) met the inclusion criteria. Seventy-eight percent of those who met the inclusion criteria (n=506) completed follow-up survey six months later.

Measures

Self-reported drinking data were used as the basis for the evaluation. Data were collected at baseline and six months post-intervention. Study participants completed all surveys online.

Alcohol use: Several measures were used to assess typical, peak and heavy episodic drinking. Typical alcohol consumption was assessed using two measures: average number of drinks per social drinking occasion and total number of drinks in a typical drinking week. To assess average number of drinks per social drinking occasion, students were asked: “When you party, how many drinks do you usually have?” To assess total number of drinks in a typical week, participants completed the Daily Drinking Questionnaire (DDQ) [12]. Using the DDQ, participants indicated the number of drinks consumed on each day of the week for a typical drinking week during the past 30 days.

Peak alcohol consumption was assessed using two measures: number of drinks consumed on the heaviest drinking occasion in the past 30 days and the total number of drinks during the heaviest week. To assess peak drinking, students were asked: “Think of the occasion you drank the most alcohol in the past 30 days. How much alcohol did you drink?” To assess total number of drinks in a peak drinking week, participants completed the DDQ indicating the number of drinks consumed on each day of the week for their heaviest drinking week within the past 30 days.

Finally, students reported the frequency of heavy episodic drinking, in terms of the number of times that the student drank five/four (male/female) or more drinks in one sitting within the last two weeks prior to completing the survey [13]. Those who reported engaging in heavy episodic drinking three or more times in this two-week period were classified as frequent heavy episodic drinkers.

All methods and procedures were reviewed and approved by the university’s institutional review board.

Results

Baseline equivalence of samples. To evaluate the effectiveness of the BASICS program, the analysis began with tests of equivalence between the intervention and comparison groups at baseline on demographic and key outcome variables of interest (t-tests for continuous variables, chi-square tests of categorical variables). Table 1 displays the demographic characteristics by group.

Table 1

Demographic characteristics of subjects in comparison and BASICS group

		Comparison Group (%) (n=506)	BASICS Group (%) (n=1390)	P-value
Birth Sex	Female	39.7	41.5	0.48
	Male	60.3	58.5	
College Year	Freshman	47.4	45.4	0.80
	Sophomore	36.2	38.0	
	Junior	11.9	13.6	
	Senior	4.5	2.7	
	5 th year	0	0.4	
Race/Ethnicity	Asian	5.1	4.9	<0.001
	Black	4.5	1.5	
	Hispanic	0	4.3	
	White	90.4	89.3	
Residence	Residence Hall	91.1	90.9	0.91
Average age (years $\pm$ SD)		19.2 $\pm$ 1.3	20.1 $\pm$ 1.2	<0.001

There were no statistically significant differences between groups at baseline on gender, class year, or residential status. Intervention group members were on average one year older than the comparison group ($p < .001$). Based on a subgroup analysis, the males assigned to the BASICS program tended to have higher rates of drinking at baseline as measured by each of the outcome variables compared to the comparison group. Female intervention and comparison groups matched more closely at baseline than the males (see Table 2).

Effectiveness of BASICS: Effectiveness of the intervention was examined based on changes in: (1) single episode drinking; (2) weekly cumulative alcohol consumption (number of drinks in a typical week and number of drinks in a peak drinking week); and (3) high risk drinking behaviors (binge and frequent binge drinking). Generalized linear modeling techniques with time, group and time by group interactions within gender categories were used for the analysis.

Table 2

Comparison of baseline drinking behaviors between comparison and BASICS Group

Outcome	Comparison (N=506)* Mean (SE)	BASICS (N=1390)* Mean (SE)	P-value (group)	P-value (gender)	P-value (group x gender)
Typical # drinks [†]	6.1 (0.1)	6.9 (0.2)	<0.001	<0.001	0.01
Peak # drinks [†]	9.2 (0.2)	9.3 (0.1)	0.32	<0.001	0.23
Typical week # [†]	15.1 (0.6)	16.1 (0.3)	0.04	<0.001	0.20
Peak week # [†]	21.2 (0.8)	23.8 (0.5)	0.01	<0.001	0.48
Ever binge [‡]	75.9% (13.6%)	79.5% (8.7%)	0.19	0.64	0.07
Frequent binge [‡]	49.0% (11.7%)	50.5% (7.0%)	0.66	0.70	0.15

* Missing values for each outcome variable were at most 5 percent of the total number of observations

** Interaction between time and gender is significant (P-value<0.05)

[†] Linear regression of outcome variables with gender and follow-up status as predictors.

[‡] Logistic regression of outcome variables with gender and follow-up status as predictors. Percentages reported were actual percentages in the sample.

Results of the regression analyses indicate that, for males, the BASICS program resulted in decreases in typical number of drinks per occasion, and typical and peak number

of drinks in a week compared to students who did not receive the intervention. For males in the comparison group, all outcome variables increased or stayed constant six months after baseline, with one exception: comparison group males reported significantly fewer drinks on a peak drinking occasion. Intervention group males had higher rates of drinking at baseline than those in the comparison group; however, six-month follow-up data indicate that their drinking decreased. Significantly fewer males in the intervention group reported frequent binge drinking at follow-up than in the comparison group (44.3% v. 50.4%, $p < .014$)

Typical and peak drinking decreased for women in both the intervention and comparison groups. However, intervention group females reported decreased drinking across all other outcome variables, while the comparison group stayed the same. At follow-up, there was a 10% reduction in the number of intervention group females who reported frequent bingeing, while the percentage comparison group females who reported frequent heavy bingeing increased by 7%. None of these differences reached statistical significance (see Table 3).

Table 3

Comparison of outcomes of interest within gender. Changes across intervention group within gender

	<i>Males</i>			<i>Females</i>		
Outcome	Comparison (LS mean) N=305	BASICS (LS mean) N=813	P-value	Comparison (LS mean) N=201	BASICS (LS mean) N=577	P-value
Typical # drinks*	-0.098	0.694	0.0002	0.119	0.445	0.053
Peak # drinks*	0.577	0.890	0.365	0.326	0.666	0.269
Typical week #*	0.113	1.829	0.037	0.766	0.910	0.836
Peak week #*	-0.534	2.117	0.064	-0.010	1.736	0.078
Ever binge**	0.6 %	5.1 %	0.119	1.3 %	2.1 %	0.882
Frequent binge**	-1.6 %	6.3 %	0.014	-3.3 %	4.3 %	0.079

Main predictor variables included time, group and time by group interaction. P-values correspond to the interaction between time and group.

*Linear regression of outcome variables

** Logistic regression of outcome variables

Discussion

The program examined in this report is one of the largest in the country, with over 1000 students receiving the BASICS intervention each year. The results of this study indicate

that implementing the BASICS program may reduce drinking behaviors, especially for moderate and high-risk drinkers. As campuses make decisions about programming with limited resources, it is important to select programs that have evidence of effectiveness. Results of this study show that BASICS is an effective intervention for reducing drinking among college students.

This study has several limitations. This study examines the implementation of a BASICS intervention in a naturalistic setting. Campus representatives believed that it would be unethical to deny an evidence-based intervention to high-risk drinkers. Additionally, campus policy and judicial procedures made randomizing students into intervention and control group (even if the control group received an education-only intervention) not feasible. Therefore, in order to comply with campus procedures, we implemented a quasi-experimental design with a comparison group approximating the mandated population.

Follow-up rates for both the intervention and comparison groups were somewhat low (67% and 78% respectively), but this follow-up rate is consistent with other studies [11]. We had limited interactions with students between baseline and six month follow-up. We sent three e-mail reminders to students who did not complete the survey and followed-up with a phone call to increase response rates.

There were differences between the intervention and comparison group. Females were more equivalent than males between these two groups. Although research is mixed on the moderating effects of gender [10, 14-15], these results need to be interpreted carefully. Although our conclusion implies a reduction in drinking for males, replication of this study is necessary to assess potential biases introduced by regression to the mean or differential attrition rates between groups and gender.

Conclusion

This intervention relies upon personalized feedback and is individualized to meet the readiness for change of the individual; therefore, it is reasonable to assume that adaptations to this model in other cultural settings would be effective.

In Russia, high levels of alcohol consumption among Russian citizens have been linked to increased mortality rates [16]. Furthermore, research suggests that the current alcohol-related mortality rate is significantly underestimated. Leon and colleagues found that, if they generalize their study results to the entire Russian population, there were more than 170,000 excess deaths per year among working-aged men between 2003 and 2005 [17]. Researchers found that accidents, violence, and alcohol-poisoning were the three most common causes of alcohol-related mortality [18]. To reduce the number of excess deaths and

consequences of alcohol in Russia, prevention and intervention programs are essential. This article provides the evaluation results for an evidence-based program designed to reduce alcohol consumption among high-risk college students.

Although students who participated in the program reduced their drinking rates, they are still drinking in significantly high-risk ways. Further research is needed to determine if additional interventions can be effective at further reducing drinking rates.

Acknowledgements: The study was funded by the Substance Abuse Mental Health Services Administration, Center for Substance Abuse Treatment, Grant Number TI17268 and the United States Department of Education Model Grant Program Grant Number Q184N080015.

References

1. Hingson, R.W., Zha, W., Weitzman, E.R. Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students aged 18-24: 1998 to 2005. *J Stud Alcohol and Drugs*. 2009;16 (Supplement):12-20.
2. Wechsler, H., Nelson, T.F. Binge drinking and the American college student: What's five drinks? *PsycholAddicBeh*. 2001;15:287-291.
3. Johnston L.D, O'Malley P.M, Bachman J.G, Schulenberg J.E. Monitoring the Future National Results on Adolescent Drug Use: Overview of Key Findings, 2004. Bethesda, MD: National Institute on Drug Abuse; 2005. NIH Publication No. 05-5726
4. National Institute of Alcohol Abuse and Alcoholism. A Call to Action: Changing the Culture of Drinking at U.S. Colleges. Bethesda, MD: Author; 2002. NIH Pub. No. 02-5010.
5. Carey, K.B, Scott-Sheldon, L.A.J., Carey, M., DeMartini, K.S Individual-level interventions to reduce college student drinking: A meta-analytic review. *Addict Behav*. 2007;32:2469-2494.
6. Dimeff, L.A, Baer, J.S, Kivlahan, D.R, Marlatt, G.A. Brief alcohol screening and intervention for college students: A harm reduction approach. New York: Guilford Press;1999.
7. Baer, J.S, Kivlahan, D.R, Blume, A.W, McKnight, P., Marlatt, G.A. Brief Intervention for Heavy-Drinking College Students: 4-Year Follow-Up and Natural History. *Am J Public Health*. 2001;91(8):1310-16.
8. Larimer, M.E, Crouce, J.M. Identification, prevention, and treatment: A review of individual focused strategies to reduce problematic alcohol consumption by college students. *J Stud Alcohol*. 2002;(Suppl 14),148-163.
9. Larimer, M.E, Crouce, J.M. Identification, prevention, and treatment revisited: Individual-focused college drinking prevention strategies 1999-2006. *Addict Behav*. 2007;32(11): 2439-2468.
10. Walters, S.T, Neighbors, C. Feedback interventions for college alcohol misuse: What, why, and for whom? *Addict Behav*. 2005;30:1168-1182.
11. Larimer, M.E, Crouce, J.M, Lee, C., Kilmer, J. Brief intervention in college settings. *Alcohol Res Health*. 2005;28(2):98-104.
12. Collins, R.L, Parks, G.A, Marlatt, G.A. Social determinants of alcohol consumption: The effects of social interaction and model status on the self-administration of alcohol. *J Consult Clin Psychol*. 1985;53:189-200.
13. Wechsler, H., Lee, J.E, Kuo, M., Seibring, M., Nelson, T.F, Lee, H. Trends in college binge drinking during a period of increased prevention efforts: Findings from the Harvard School of Public Health College Alcohol Study Surveys: 1993-2001. *J Am Coll Health*. 2002;50:203-217.
14. Wu, L, Pilowsky, D.J, Schlenger, W.E, Hasin, D. Alcohol use disorders and the use of treatment services among college-age young adults. *Psychiatr Serv*. 2007;58:192-200.
15. Collins, S.E, Carey, K.B, Sliwinski, M.J. Mailed personalized normative feedback as a brief intervention for at-risk college drinkers. *J Stud Alcohol*. 2002;63: 559-567.
16. Stickley, A, Razvodovsky, Y., McKee, M. Alcohol Mortality in Russia: A historical perspective.*Public Health* 12:20-26.
17. Leon, D., Vladimir S., and Martin M. Alcohol and Russian mortality: A continuing crisis.*Addiction* 104:1630-1636.
18. Zaridze, D, Brennan, P, Boreham, J., Boroda, A., Karpov, R., Lazarev, A., Konobeevskaya, I., et al., (2009). Alcohol and cause-specific mortality in Russia: A retrospective case-control study of 48,557 adult deaths. *The Lancet*, 373:2201-2214.

Nyudlya Araeva, David Buchanan, Anna Nevalennaya

**PUBLIC POLICY, CITIZEN VOICES AND RESPONSES TO DECLINING
FERTILITY IN POST-SOVIET RUSSIA**

University of Massachusetts, Amherst, USA

University of Stockholm, Center for Health Equity Studies (CHESS)

Мы проанализировали государственные документы в области семейной политики, а также взяли интервью у жительниц Пскова и Великого Новгорода. Анализ показал, что ценности, декларированные в государственных документах, не всегда разделяются гражданами, как и пути решения проблемы низкой рождаемости. Структурные изменения, ведущие к большему гендерному равенству, а также предоставление более качественного среднего образования со стороны государства были бы более эффективными подходами к решению проблемы.

Ключевые слова: семейная политика государства, низкая рождаемость, структурные изменения, гендерное равенство.

Abstract

We analyzed state documents in the field of family policy, as well as interviewed women living in Pskov and Veliky Novgorod. The analysis showed that values declared in the state policy documents are not entirely consistent with the views of citizens, nor are the ways to address the problem of low birth rates. Social structural changes leading to greater gender equality and to the provision of a state-supported quality secondary education remain as major policy challenges.

Key Words: family policy, low birth rates, structural changes, gender equality.

Russia is experiencing an unprecedented peace-time decline in its population, due to the convergence of high mortality rates and low fertility rates. The issue is referred to as a “demographic crisis,” based on observations that the Russian Federation may be losing as many as 750,000–1 million people per year. The sociologist Antonov [1] has dubbed the situation “the process of depopulation.” According to a United Nations report, the population is projected to decline from 141 million people now to 116 million by 2050. If these trends persist, they hold ominous implications for the economic, political and social stability of the country. In his 2006 State of the Nation address, then-President Vladimir Putin asserted that population decline was “the main issue” for domestic policy facing the nation [2].

The purpose of this paper is to compare the rationale presented in official state policies passed by the Russian government to address the demographic crisis, with the views of ordinary citizens about the nature of the problem and what needs to be done. Policy proposals are never value-neutral statements designed solely on the basis of scientific data on cost-effectiveness; they are always shaped by social and political values. In *Policy Paradox: The Art of Political Decision Making*, Stone [3] points out, “The essence of policy making [is] the struggle over ideas. . . What political communities decide about when they make policy is meaning, not matters of fact.” Stone identifies three key policy design issues that drive debates about various options: problem definition, goals, and methods of solution. Stone argues that values frame how the problem is defined, which shapes how the goals are set, which in turn defines the scope of methods seen to be appropriate.

The paper is divided into three parts. The first section reviews models of demographic policies enacted in different countries and examines the different values embodied in their respective problem definitions, goals and solutions. The second part presents an analysis of the recent Russian “maternity capital” policy and the values reflected in its formulation. The final part summarizes the analysis of interviews with young Russian women regarding how they see the issue and the factors that weigh in their decision to have a child. The paper concludes with a discussion of areas of congruence and discrepancy between state intentions and the voiced needs of parents.

Different demographic policies

To appreciate the range of policy options available to governments to respond to declines in birth rates, we start with a description of three models of family policies. These models are presented as “ideal types,” à la Weber, to highlight contrasts among various alternatives, with examples to illustrate how different approaches have been put into practice.

Policy analysts have identified a number of family policy models. Gauthier [4, 5] identifies four family-policy models: 1) pro-natalist, 2) pro-traditional, 3) pro-egalitarian, and 4) pro-family marked by non-interference by the state. Chernova [6] describes three models operating in different welfare systems. Here, we synthesize these analyses, and, following Chernova [6], term them conservative, liberal, and social democratic models. Key characteristics of the models are summarized in Table 1.

Conservative model: In conservative model, the main problem leading to the declining number of babies is the erosion of family values and break-up of the traditional nuclear family, as seen in rising divorce rates and single parent families. Thus, state policy is designed to preserve and boost the conventional family, with its gendered division of labor between

male bread-winner and female home-maker. Although government policy provides benefits to enable mothers to care for their babies, it does not aim to reduce barriers for women with children to return to work. Thus, the provision of child care is limited, making the resolution of competing demands between family and work difficult.

Liberal model: In the liberal model, the problem of low fertility rates is attributed to the stress of economic deprivation for families. Thus, to increase birth rates, the goal of government policy is to provide social and financial support to families to make raising children feasible. This approach is characterized by a minimum of interference by the state into “private” family matters, such as marital status or gender roles.

Social-democratic model: In the social-democratic model, the main problem that is seen to inhibit birth rates is gender inequality. Thus, the goal of family policy is to reinforce and extend the principle of gender equality in both parenting and professional realms. Thus, the solution is to provide large state benefits to working parents to enable both parents to effectively combine work and family roles.

Table 1

Summary of the differences in different types of family policies

<i>Models of Family Policies</i>			
	Conservative	Liberal	Social Democratic
Problem Definition	Crisis in moral/family values, which has led to the break-up of the traditional nuclear family. Young people are becoming increasingly selfish.	It is hard for women with limited income to raise children. Single mothers (widowed, divorced or never married) struggle to make ends meet. Women cannot work in order to support themselves and their family unless they have child care.	1. Question whether there is a “problem.” Having fewer children is “natural” trend, as individuals increasingly want greater autonomy. 2. To the extent there is a problem, it is due to inequities in the “dual burden,” contradiction between workplace equality and family patriarchy; fathers do not do their fair share of domestic work.
Goals	Revival of moral values; restoration of traditional gender roles (“bread winner,” “homemaker”); reversal of trends in divorce, single parenting more mothers stay at home to raise children.	To reduce real and imagined fear of poverty as barrier to having children; fewer children living in poverty; expand access to contraception.	Gender equality; equal sharing of family and work responsibilities.
Methods of Solution	State support for religious organizations; “abstinence-only” sex ed curricula; the rejection of gay rights; Indifference to gender inequalities in pay	Provide temporary financial assistance; expand child care	Extended equal parental leaves; high access to childcare (so mothers and fathers can return to work when they wish)

Family policy in Russia

In 2001, in response to the significant decline in population, the Russian government put forth its position in a document titled, "On the Concept of the Demographic Development of Russian Federation for the period through 2015." [7]. The Concept is a normative statement presenting the official government position on the demographic situation in the country. This document served as a basis for an updated version called "Concept of Demographic Policy of the Russian Federation for the period through 2025" that was passed in 2007 [8].

According to the Concept, the goal is "to stabilize the population and to create the conditions necessary for subsequent demographic growth." [7] To achieve this goal, the state must address the need to be "pro-birth and to strengthen families." To meet these needs, the Concept announces the following policy objectives:

- to create a system of family-oriented social and personal values, to encourage people to have two or more children; • to improve living standards, the level and quality of family life; and,
- to establish a socio-economic environment conducive to the birth and the maintenance and education of several children [7].

The language used in the Concept presumes that increasing the birth rate is tied to increasing the prestige of officially registered marriages and family values. For example, the Concept cites concerns about the growing practice of not legally solemnizing marriage, where "in 2000, every fourth child was born out of wedlock." [7] As noted above, the specific policy provisions, however, give priority to activities aimed at improving the material situation of the family at the time of birth and families with small children.

"Maternity capital," the official name for the allowance, is limited to three purposes: 1) improving housing conditions, 2) paying children's education, or 3) savings for the mother's pension account. Mothers can access the benefit only 3 years after the birth of the child. This stipulation was introduced to deter women who might abandon a child after they receive the benefit [9].

Following the release of the Concept, the year 2008 was declared the "Year of the Family," which promoted activities aimed at "strengthening the family institution and the promotion of family values." These activities were intended "to form the spiritual and moral culture of young parents, promoting family values and responsible parenthood." The declaration also promoted all-Russian festivals and competitions aimed at bolstering family values [10].

Citizens Views

Methods: At the heart of this investigation, we examined the degree of fit between the values embodied in official state policies and the views espoused by citizens most directly affected by them, namely, young women who were pregnant or had recently given birth. To what extent did they see that the government's policies addressed their needs and concerns about bringing children into the world? To assess how well the official policies matched public perceptions about the nature of the problem, we developed a semi-structured interview to examine issues of problem definition, goals and methods of solution. We used a purposive sampling process targeting women of reproductive age. To gain a broader range of public views, participants were recruited in two provincial capital cities of similar size: Pskov and Novgorod-the-Great. The cities represent typical provincial cities, in contrast to the major metropolitan areas of Moscow and Saint Petersburg. The Pskov region is known as one of the most socially, culturally and politically conservative regions in Russia, while Novgorod historically remained open and adaptive to new ideas [11].

We conducted 22 individual interviews with women 25-50 years old. The interviews were recorded by digital voice recorders and files were transferred to laptop computers at the end of each session. The audio files were transcribed and the transcripts stored in a secure location. Personal identifiers were eliminated so that individual subjects could no longer be identified. The names used below have been changed to protect the respondents' anonymity.

The interviews were analyzed using standard methods of content analysis, starting with reading the transcripts multiple times to gain a sense of the flow of the discussion [12]. Each transcript was coded independently by members of the research team. The first step of the analysis captured the manifest content of the interviews - the surface-level presentation of topics. Independently identified codes were then compared, and where similar, combined into single categories through consensus discussions. In the second step, the research team inductively synthesized the primary codes into major categories. Finally, using a process of constant comparative analysis, relationships among the codes and themes were integrated and condensed into the final coding scheme.

Results: Five major themes emerged from the interviews: 1) positive perceptions of the "maternity capital" policy; 2) concerns about its financial adequacy; 3) social structural concerns; 4) changing views with modernization; and, 5) other issues.

To start, the ideal number of children expressed by women in this study was two; no one voiced the desire or need to have more than three children. The major reason for having a first child was related to biological essentialism, the perception that a woman's life cannot be

fulfilled without bearing a child: “It is the need that every woman has by nature” (Elena, 35). One respondent describes the reaction of others about the news that she was going to have a child: “Everybody was happy. ‘It’s time, [you have a] profession, education – you need this now’” (Svetlana, 36).

Where the desire to have a first child seemed to be unrelated to and unaffected by state policies, the new maternity capital policy appeared to affect plans for a second child. Most respondents said that women want to have a second child to reach the ideal number of children in the family: “One child is not a family” (Anna, 39). It was questions and concerns about the practical possibility of having a second child that pre-occupied the thoughts of most respondents.

Positive views

Positive effect of maternity capital policy: Many respondents commented that they see more women who are pregnant now than in years past. “I think that many people want to have children nowadays. I see a lot of pregnant women around. My girlfriends suddenly got pregnant” (Elvira, age 33). “Six years ago, there were not as many children. And I see many such women, when they bring one kid to kindergarten, they have another one in the belly” (Katya, 32). Some respondents related the increased number directly to the Government measures: “I think that the present situation is the result of state policy” (Katya, age 32).

When asked to evaluate the maternity capital policy, most respondents expressed satisfaction, particularly in comparison to not receiving anything at all: “Maternity capital – even a small part – is a help” (Svetlana, 36). “I think it’s better than nothing” (Elvira, 33).

Minor influence: Although most women appreciated the financial support, the maternity capital allowance was not considered a major factor influencing decisions to have another child. It was instead regarded as just “another brick,” an additional argument in favor for those who might be hesitating. Maternity capital might tip the balance for those women or families who “hesitate, if ‘yes’ or ‘no,’ then it may play a role. If there are doubts, then, ‘yes’” (Svetlana, 36). “It was not a leading criteria . . . It was an additional ‘brick.’”

In contrast, a few women said that it did not have any effect: “It does not make any sense to me. This measure means nothing . . . I would not decide to give birth because of it . . . I don’t think it’s effective” (Oxana, 28).

Concerns about its adequacy

Adequacy of allowance: With regards to the aim of the maternity capital policy, most respondents said that the amount was insufficient: “For the education of a child, it’s too early.

With prices that rise, you never know . . . For improving housing conditions, well, the amount is wrong . . . It looks like this measure is not enough by itself” (Anna, 39).

Housing: For the majority of women, housing was the most acute need they faced. Several women who already had one child said that they would like to have another child, but only “when we have our own housing. If we had, we would have a second child right away” (Oxana, 28). Similarly, “I think 2-3 children is ideal, [but] you need housing big enough” (Anna, 39).

Still, after acknowledging that the amount was not sufficient, many stated that they will use allowance to improve their housing situation: “Although the amount is very small, of course, if you add something, maybe then you will get something” (Irina, 25).

Broader social structural concerns

Caring for the whole of a child’s welfare: All respondents emphasized that raising a child involves a comprehensive process not limited merely to meeting basic material needs. Raising a child focuses, first and foremost, on teaching moral values: “A sense of responsibility, sense of duty – moral qualities are important, kindness” (Katya, 32). Where the state proposes tangible support at birth, the women voiced concerns about the future of the child as she grows up, which requires quality childcare, quality medical care and a good education.

After moral values, the respondents noted that providing a good education is the most important need for children: “It’s more important to raise a good person, what you give to her now is important . . . Plus giving her an education.” “Without education, there is no way now that he can provide for himself” (Elvira, 33).

Lack of kindergarten space: The quality and lack of childcare were major concerns for these women. The scarcity of government-subsidized childcare has become acute: “I think, mainly from material side, because it’s difficult with kindergartens. My girlfriend recently gave birth and she has already joined the waiting list for a place in a kindergarten” (Anna, 39). “I received my allowance until my child turned 1.5 years old. After that, no support and no places in the kindergartens - where is the logic [in that]?” (Oxana, 28).

Even when spaces in kindergartens are available, the quality of the programs is perceived to be poor: “Kindergartens have neither good teachers, nor nutrition . . . There was one case - the children went on a field-trip to the countryside with the kindergarten. In the evening, my daughter comes to pick up her son, but the child is dirty and the teacher is drunk” (Valentina, 50).

Ensuring the quality of children's education: A new burden on the roles that women perform - as wife, housekeeper and money-earner - is the need to supplement their children's education. The poor quality of schools, coupled with rising expectations for academic performance to enter professional careers, forces mothers to act as tutors for their children. The women described their typical workday as one that starts with taking care of the child - feeding him, taking him for a walk, playing with him; followed by duties such as cooking, cleaning, washing clothes; and then helping their children with their homework. Women are expected to fulfill the traditional roles as housewife and care-taker, but now she has another job as well: "When you get home, you have to cook, to have dinner, to wash up dishes, *and* to make sure that the children do their homework" (Elena, 35). "When I get home from work, I give him 2 hours for rest. After that, he prepares his homework and recites his oral subjects" (Svetlana, 33).

Changing views with modernization

Burden of dual role: The women expressed frustration with being overloaded by the "dual burden" of maintaining the traditional roles of housekeeper and care-giver, while being in labor force,. The gender roles of Russian women, where they are assumed to be responsible for domestic chores, while at the same time, they must go to work, creates the so-called "second shift" for women: first work outside, then inside the home.

The many responsibilities of women – as care-taker, worker, educator – are made more difficult by the low involvement of men in the "private sphere" of raising children [13]. Nowadays, most women are reconciled to the need to combine work and family duties, whether or not they have a "bread-winner" husband: "A husband is, obviously, a big help – moral, material and physical, but when something happens [like divorce], you can rely only on yourself." "I understood that my life is going to change, that my plans are going to change . . . I was clearly realizing that I did not have any helpers" (Katya, 32).

Trends in "right" time to have first child: The women expressed different ideas about the right time to have a baby. Some want to start early. One woman, who had her first child at the age of 25, said that "It was late for having the first child" (Oxana, 28). Another said, "I remember when I was giving birth the first time, at the age of 21, I was considered to be an 'old' mother because there were many 16-17 year olds around" (Anna, 39). For most of the women interviewed, the "right" age for having the first child is the early twenties, around 21 to 25 years old.

For others, however, the "right" age for having the first child seems to be shifting in recent years. They see a trend to postpone having children until one's professional career is

established. As one respondent said, “How to say? People my age [36], for example, want to have more children; they would like to have a second and a third child. As for younger people, they are ambitious; they want to have a career first. Young people have interests other than having children. We lived differently” (Svetlana, 36). “Now more women start to give birth at an older age” (Anna, 39).

Trends in views about the definition of “family”: A few respondents held traditional views that the desire to have a child depends on the status of the woman: “Yes, my daughter would like to have another child” (Valentina, 50, of her unmarried daughter who has 1 child). However, most of those interviewed indicated that the diversity of family types and gender relations (beyond traditional roles) are becoming common in Russia, reflecting global demographic trends. The women all had personal experiences with a range of family types, beyond the conventional family form (wife-at-home, husband-earner and children). Many other types were mentioned: families consisting of a mother and two children, with "a man who comes and goes"; "civil marriage;" a second pregnancy with a new partner after divorce; etc.

Other issues

Doubts about state promises: All of the women were aware of government aid to families, but discussions of the new "maternity capital" policy revealed many doubts and uncertainties about the measure. First, not all women knew the exact provisions of the law, e.g., the amount of money, restrictions on its use, etc. The various conditions that the government has put on accessing and using the money make women unsure about its value and utility: “It’s not easy to get [the certificate for Maternity Capital].” Several expressed skepticism that the money would be there when they finally tried to access it: “You cannot use it until the child grows up. Nobody believes it will be there. What is the use of it? It’s in a bank somewhere” (Elvira, 33).

Discussion

The results of the preceding analysis show that family policy in Russia does not fit neatly into any unitary model. The formulation of the Concept was simultaneously founded on - and a reaction to - Soviet antecedents. It is both an outgrowth of specific historical circumstances, and constrained by the perceived possibilities of its time. Many diverse stakeholders - political leaders, NGOs, religious organizations, professional societies, media, etc. - had a hand in its development. Family policy in Russia reflects the many conflicting impulses that went into its making. Nonetheless, a few generalizations can be drawn.

The Concept propounds a mix of conservative rhetoric and liberal policy measures. While the language of the document laments the number of children born out of wedlock and the need to foster family-oriented personal and social values, the specific policy measures focus on improving the economic conditions of women, to enable them to take temporary leave from work, to subsidize the cost of childcare or to make a down payment on a larger living space.

Despite carefully worded statements acknowledging the importance of gender-balanced family policy, the Concept focuses its primary attention on women as mothers [6]. Although the Concept avers the need to “strengthen families,” there are no provisions addressed to the needs of men as fathers. Indeed, the Concept promises a new relationship between mothers and the state. To solve social problems faced by the state, such as the pending economic troubles forecast in the low birth rate, the state offers women a contract, “maternity capital,” in exchange for bearing children. In so doing, the state usurps the traditional role of fathers, as the government becomes the new bread-winner for a woman and her children [14]. Filling out its new role, the government acts with a heavy-handed paternalism in restricting the options for which women may use the proffered capital.

The interviews also reflected a mix of views, although they tended towards the more liberal-to–progressive end of the spectrum of models described above. While a few people said that a woman needed to be married first to have children, far more women were concerned about securing their independence. They welcomed the financial support, especially as the need for better housing conditions pre-occupied their minds. Most cherish the ideal of having two children, and appreciate the value of the allowance, however modest, in assisting them to secure a roomier, more comfortable space.

However, while the state measures aimed at improving the financial situation of women immediately after birth, most women were worried about long-term needs for raising a child. They want a good education for their children, but fear that the family subsidies fail to address social structural problems in both the quantity and quality of educational seats. Almost all saw that they have to manage a difficult balance between work and child-rearing responsibilities. Many kindergartens were closed during 1990s and the available slots in child care facilities are not enough now to meet demand. With the growing desire by women for financial independence, the availability of adequate child care represents a crucial need for support.

Views on gender roles point to another mismatch between government policies and women’s views. The inequity of the dual burden was a constant frustration. Whereas the

government encourages traditional family roles, women welcome the growing range of family types. We did not hear any interest in bringing back the traditional nuclear family.

In conclusion, there are areas of overlap in the values embodied in government family policy and the views of ordinary citizens, while at the same time, there were considerable discrepancies. The voices of women call for greater gender equality and greater investment in quality education.

References

1. Antonov, A. (1999). Demograficheskoye budushchee Rossii: Depopulyatsiya navsegda? *Sociological Research*, 3: 80-86.
2. Putin, V. Message to the Federal Assembly of May 11, 2006 (accessed on October 20, 2011) <http://www.rg.ru/2006/05/11/poslanie-dok.html>
3. Stone, D. *Policy Paradox: The Art of Political Decision Making*. New York: W. W. Norton & Company, 2001.
4. Gauthier, A. (1998). *The State and the Family: A Comparative Analysis of Family Policies in Industrialized Countries*. Oxford University Press.
5. Gauthier, A. (2007). The impact of family policies on fertility in industrialized countries: a review of the literature. *Population Research and Policy Review* 26 (3): 323-346.
6. Chernova, Zh. (2008). *Semeinaya politika v Evrope i Rossii: genderny analiz*. – Spb.: Norma, 2008.
7. On the Concept of Demographic Development of Russian Federation Through the Year 2015 <http://www.minzdravsoc.ru/docs/go> (accessed on May 2008)
8. Concept of Demographic Policy of Russian Federation Through the Year 2025 <http://demoscope.ru/weekly/knigi/koncepciya/koncepciya25.html> (accessed on October 15, 2011)
9. Federal Law of the Russian federation #256-FZ of December 29, 2006 “On additional measures of state support for families with children” <http://www.rg.ru/2006/12/31/roditelyam-dok.html> (accessed on May 29, 2008)
10. The decree of the Russian Federation Government of 2008 # 170-r “On approval of the Plan of Activities on realization in 2008-2010 of the Concept of Demographic Policy of the Russian Federation for the period through 2025” <http://www.minzdravsoc.ru/docs/government/rasp/0/?print=1> (accessed on October 2011)
11. Petro, Nikolai. (2006). A Tale of two regions: Novgorod and Pskov as models of symbolic development. *The Journal of Socio-economics* 35: 946-958.
12. Miles, M., Huberman, M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*, 2nd Edition. Sage Publications, Thousand Oaks, California.
13. Rotkirh, A., Temkina A. (2007). Sovetskiye gendernye kontrakty I ih transformatsii v sovremennoy Rossii // Rossiysky genderny poryadok: sotsiologicheskyy podhod: kollektivnaya monografiya. Spb.: Evropeiskogo Universiteta v Sankt Peterburge, 169-200.
14. Rivkin-Fish, Michele. (2010). Pronatalism, Gender Politics and the Renewal of Family Support in Russia: Toward a Feminist Anthropology of “Maternity Capital.” *Slavic Review* 69 (3): 701-724.

Julie Mooza, Valery Mishecurin, Natalya Nikitina

MATERNAL ALCOHOL CONSUMPTION, SMOKING, AND BIRTH WEIGHT IN INFANTS BORN IN VELIKY NOVGOROD, RUSSIAN FEDERATION

*University Health Services, University of Massachusetts, Amherst, USA
Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia*

Source Information

From the Institute for Global Health, School of Public Health, University of Massachusetts, Amherst, MA, USA (J.B.M.); and Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russian Federation (V.Y.M.). Correspondence may be addressed to Ms. Julie B. Mooza at mooza.j@gmail.com.

Abstract

This cross-sectional study examined the relationship between alcohol consumption and smoking before and during pregnancy and birth weight in infants born in Veliky Novgorod, Russia. This study found that mothers who consumed greater than or equal to one alcoholic drink per week during the three months before pregnancy were likely to give birth to babies weighing more than women who did not drink alcohol during this time.

Key words: alcohol, smoking, birth weight, pregnancy, women, reproductive health.

Introduction

Low birth weight is a global problem with increasing rates in countries such as the United States and the Russian Federation alike. In 1999, 7.0% of babies born in the United States had low birth weight [1]. This number increased to 7.8% in 2002. The number of babies born with low birth weight in the Russian Federation has also increased. In 1990, 5.3% of Russian-born babies had low birth weight [1]. This number increased to 6.0% in 2007. Examining risk factors for low birth weight among different populations is important for developing an accurate understanding of these relationships and creating targeted prevention programs.

Low birth weight is the most important factor affecting neonatal mortality and is a significant factor of mortality after delivery [13]. During their first four weeks of life, low birth weight infants are almost 40 times more likely to die than normal birth weight infants [13]. Infants who survive are at increased risk for health problems including neurodevelopmental handicaps, significant congenital anomalies, lower respiratory tract conditions, and learning disabilities later in life [12]. Low birth weight infants are three times

as likely as normal birth weight infant to have neurodevelopmental handicaps [12]. Therefore, it is important to identify and understand the relationships between low birth weight and its associated risk factors in an attempt to prevent occurrences of negative health outcomes.

When mothers smoke during pregnancy, toxic chemicals including nicotine, hydrogen cyanide, and carbon monoxide are released in to the bloodstream [9,14]. The chemicals are transferred through the placenta to the fetus. The toxins deplete the oxygen supply of the fetus, and as a direct result, the fetus may experience intrauterine growth retardation (IUGR) and low birth weight [14]. When mothers consume alcohol during pregnancy, the fetus is exposed to chemicals such as ethanol and acetaldehyde [6]. These toxins interfere with nutrient absorption by the fetus, in addition to disruption of cellular differentiation and growth, DNA protein synthesis, and cell migration, which may result in stunted growth and low birth weight [6].

Because prevalence and patterns of alcohol use and smoking during pregnancy differ among Russian and American women, different relations between these factors and birth weight may be observed. However, there has been only one study of this relationship among Russian women who are pregnant [3]. More research is needed to improve our understanding of the relationships between modifiable risk factors such as alcohol consumption and smoking and birth weight among new populations for the purpose of developing population-specific preventative measures.

This study examined the relationship between maternal alcohol consumption and smoking before and during pregnancy, and birth weight in infants born in Veliky Novgorod, Russia.

Methods

The study base included mothers who gave birth to a singleton baby between June 1, 2010 and August 31, 2012 in the maternity clinic located in Veliky Novgorod, Russia. This was a convenience sample, where subjects were recruited during their first post-natal follow-up visit at the maternity and pediatrics clinics or within five days of delivery at the maternity clinic in Novgorod. Mothers were excluded from the study if they were HIV-positive or had AIDS, tuberculosis, heart disease, or cancer because it is possible that they may metabolize alcohol and tobacco differently due to the disease.

Administrative personnel distributed a questionnaire, translated from English to Russian, to mothers either during their first post-natal follow-up or within five days of delivery. Mothers were told that the questionnaire was confidential and for the purpose of a research study advocating infant health. The administration, doctors, and participants were

blinded to the objective of the study. A total of 200 questionnaires were distributed and 181 completed questionnaires were received. A total of six subjects were excluded from the study population. Five subjects were excluded because of missing information for exposure and outcome status. One subject was excluded because she was HIV positive, thereby falling outside the inclusion criteria for this study. The final sample size was 175 women.

The frequency and amount of alcohol consumption and smoking were measured using a questionnaire that was an adaptation of the Centers for Disease Control's Pregnancy Risk Assessment Monitoring System (PRAMS). Mothers reported birth weight of infants on the questionnaire.

Information on potential confounding factors was collected by self-report through the adapted PRAMS questionnaire. Demographic factors included maternal age, employment status, education, and marital status. Factors of medical history included anemic deficiency, high blood pressure, parity, delivery at term, maternal body mass index (BMI), date of first prenatal care visit. "Other current medical conditions" included preeclampsia, folic acid deficiency, overweight, underweight, asthma, heart disease, and previous problems in pregnancy.

Psychosocial and physical factors included information on the participant's relationship with her partner and family, financial stress, living accommodations, and having been in a physical fight during pregnancy. These covariates were selected because prior literature has identified them as potential confounding factors in the relationship between alcohol consumption, smoking, and low birth weight [4].

Data Analysis

Covariates were cross-tabulated with alcohol consumption and smoking status both as dichotomous variables (Table 3). Covariates included demographic factors, medical history, other current medical conditions, physical and psychological factors, timing of prenatal care, passive smoking, and exposure co-occurrences. When cell sizes were five or higher, the chi-square test and corresponding p values were used to evaluate the observed distribution of cross-tabulations in comparison to expected distribution. When cell sizes were below five, Fisher's exact test and corresponding p values were used.

We used unadjusted linear regression to model the relationship between alcohol and birth weight and smoking and birth weight (Table 4). Unadjusted linear regression generated a beta coefficient, standard error, and p-value.

Table 1

Distribution of alcohol consumption before and during pregnancy among study participants: Veliky Novgorod, 2012 (N=175)

	N	%
Consumed alcoholic drinks in past 2 years		
No	71	39
Yes	109	61
Consumed alcoholic drinks before or during pregnancy		
No	97	63
Yes	57	37
Average alcoholic drinks per week in 3 months before pregnancy		
None	97	54
Less than 1 drink per week	57	32
1 drink or more per week	26	14
Consumed 4 alcoholic drinks or more in a sitting (2 hours) ≥ 1 time, in 3 months before pregnancy		
No	130	72
Yes	50	28
Consumed ≥ 1 alcoholic drink per week during last 3 months of pregnancy		
No	157	88
Yes	22	13
Consumed 4 alcoholic drinks or more in a sitting (2 hours) ≥ 1 time, during last 3 months of pregnancy		
No	171	95
Yes	9	5
Note: Missing values not included.		

Multivariable linear regression was used to model the relationship between alcohol consumption and birth weight (Table 4). Similarly, multivariable linear regression was used to model the relationship between smoking status and birth weight (Table 4). Multivariate linear regression generated a beta coefficient, standard error, and p-value. Confounding variables were investigated by running models with and without each covariate. Covariates that changed the estimate by 15% or greater for both alcohol consumption and smoking status, respectively, were retained in the model as a confounder.

Results

Frequency of alcohol consumption is presented in Table 1. Alcohol consumption within the prior two years was reported by 61% of women (n=109). Alcohol consumption before or during pregnancy was reported by 37% of women (n=57). Alcohol consumption during the three months before pregnancy was reported by 46% of women (n=83). Alcohol consumption during the last three months of pregnancy was reported by 13% of women

(n=22). Binge drinking during the last three months of pregnancy was reported by 5% of women (n=9).

Table 2

**Distribution of smoking status before and during pregnancy among study participants:
Veliky Novgorod, 2012 (N=175).**

	N	%
Smoked before or during pregnancy		
No	122	87
Yes	19	14
Smoked in the past 2 years		
No	118	66
Yes	61	34
Average cigarettes per day in 3 months before pregnancy		
None	122	68
Less than 1 to 5 cigarettes	19	11
6 to 10 cigarettes	26	14
11 cigarettes or mor	13	7
Smoked ≤ 1 to 5 cigarettes per day during the last 3 months of pregnancy		
No	148	82
Yes	32	18
Note: Missing values not included.		

Frequency of smoking is presented in Table 2. Smoking within the prior two years was reported by 34% of women (n=61). Smoking before or during pregnancy was reported by 14% of women (n=19). Smoking during the three months before pregnancy was reported by 32% of women (n=58). Smoking during the last three months of pregnancy was reported by 18% of women (n=32). All 32 women who reported smoking during the last three months of pregnancy had been a smoker before pregnancy.

Birth weight ranged from 1050 grams to 4800 grams with an average of 3212 grams (standard deviation (SD) = 581 grams).

The relation of demographic, behavioral, and health factors with alcohol consumption and smoking as dichotomous variables is presented in Table 3. Education was associated with both alcohol consumption and smoking status ($p=0.03$ and $p<0.01$). Sexually transmitted infection (STI) was associated with alcohol consumption ($p=0.01$). Among women who drank alcohol, 18% had an STI as compared to 5% among non-drinkers. Rules about smoking inside the home were associated with smoking status ($p<0.01$). There was a significant co-occurrence of alcohol consumption and smoking ($p=0.05$). Other factors were not associated with alcohol consumption or smoking.

Table 3

Distribution of alcohol consumption and smoking status before and during pregnancy by covariates among study participants: Veliky Novgorod, 2012 (N=175).

	Alcohol consumption					Smoking status				
	Yes		No			Yes		No		
	(N=82)		(N=93)			(N=57)		(N=118)		
	N	%	N	%	p*	N	%	N	%	p*
Demographics										
Maternal age					0,34					0,91
≤ 25 years	37	45	41	45		25	44	53	45	
26-35 years	41	50	41	45		28	49	54	46	
≥ 36 years	4	5	10	11		4	7	10	9	
Marital status										0,40
Single/Separated/Divorced	7	9	9	10	>0.99	7	12	9	8	
Married/In a relationship	75	92	84	90		50	88	109	92	
Education					0,03					0,01
High school or less	31	38	51	55		37	67	45	38	
College degree or more	50	62	41	45		18	33	73	62	
Employment					0,19					0,23
No	13	16	23	25		15	26	21	18	
Yes	69	84	70	75		42	74	97	82	
Medical History										
Body mass index					0,87					0,01
Normal	52	64	52	62		25	46	79	71	
Underweight/Overweight	29	36	32	38		29	54	32	29	
Parity					0,65					0,74
First birth	50	61	53	57		35	61	68	58	
≥ 2 previous births	32	39	40	43		22	39	50	42	
Medical Conditions										
Anemia					0,18					0,87
No	39	48	54	58		31	54	62	53	
Yes	43	52	39	42		26	46	56	47	
High blood pressure					0,29					0,50
No	67	82	82	88		47	82	102	86	
Yes	15	18	11	12		10	18	16	14	
Preeclampsia					>0.99					0,30
No	77	94	88	95		52	91	113	96	
Yes	5	6	5	5		5	9	5	4	
Sexually-transmitted infection					0,01					0,46
No	67	82	88	95		49	86	106	90	
Yes	15	18	5	5		8	14	12	10	
Other conditions					0,15					0,37
No	73	89	75	81		46	81	102	86	

Yes	9	11	18	19		11	19	16	14	
Physical & Psychological										
Stress					>0,99					>0,99
No	78	95	88	95		54	95	112	95	
Yes	4	5	5	5		3	5	6	5	
Prenatal Care										
Months pregnant at first prenatal care visit					0,41					0,33
≤ 1 month	26	32	37	40		18	32	45	38	
2-3 months	40	49	36	39		24	42	52	44	
≥4 months	16	20	19	21		15	26	20	17	
Passive Smoking										
Rules about smoking in home					0,57					0,01
No smoking allowed	52	63	58	62		27	47	83	70	
Smoking allowed sometimes	21	26	20	22		18	32	23	19	
Smoking always allowed	9	11	15	16		12	21	12	10	
Exposure Co-Occurrences										
Consumed alcohol before or during pregnancy										0,05
No						24	42	69	58	
Yes						33	58	49	42	
*Calculated with 2-sided Fisher's Exact Test										

Unadjusted analysis of alcohol consumption and birth weight did not produce significant results. Consuming one or greater alcoholic drinks per week during the three months before pregnancy was non-significantly associated with higher mean birth weight as compared to not consuming alcohol (mean difference (MD)=239 grams; SE=128grams;p=0.06) (Table 4). Compared to non-drinking, consumption of one or more alcoholic drinks during the last three months of pregnancy was non-significantly associated with lower birth weight (MD=-188 grams; SE=130 grams; p=0.15). Binge drinking during the last three months of pregnancy was not significantly associated with a difference in mean birth weight (p=0.36).

In unadjusted analysis of smoking and birth weight, smoking less than one to five cigarettes during the three months before pregnancy was significantly associated with lower mean birth weight as compared to non-smoking (MD=-315 grams; SE=143 grams; p=0.03) (Table 4). Also before adjusting for covariates, smoking during the last three months of pregnancy was significantly associated with lower mean birth weight as compared to non-smoking (MD=-264 grams; SE=114 grams; p=0.02).

Table 4

Linear regression of birth weight by alcohol consumption and smoking: Veliky Novgorod, 2012 (N=175)

	Regression Coefficient (β)	SE	p	Regression Coefficient (β)	SE	p
	(g)	(g)		(g)	(g)	
Alcohol consumption						
Consumed alcoholic drinks before or during pregnancy						
No	Referent			Referent		
Yes	119	88	0,18	159	92	0,09
Consumed alcoholic drinks in past 2 years						
No	Referent			Referent		
Yes	47	90	0,61	50	95	0,60
Average alcoholic drinks per week in 3 months before pregnancy						
None	Referent			Referent		
Less than 1 drink per week	63	98	0,52	86	101	0,39
≥1 drink per week	239	128	0,06	324	134	0,02
Consumed ≥1 alcoholic drink per week during last 3 months of pregnancy						
None	Referent			Referent		
Yes	-188	130	0,15	-141	130	0,28
Consumed 4 alcoholic drinks or more in a sitting (2 hours) ≥1 time, in 3 months before pregnancy						
No	Referent			Referent		
Yes	-31	97	0,75	28	102	0,78
Consumed 4 alcoholic drinks or more in a sitting (2 hours) ≥1 time, during last 3 months of pregnancy						
No	Referent			Referent		
Yes	-181	199	0,36	-55	202	0,79
Smoking						
Smoked before or during pregnancy						
No	Referent			Referent		
Yes	-163	93	0,08	-147	94	0,12
Smoked in the past 2 years						
No	Referent			Referent		
Yes	-140	92	0,13	-139	93	0,14
Smoked cigarettes in 3 months before pregnancy						
None	Referent			Referent		
<1 to 5 cigarettes	-315	143	0,03	-244	148	0,10
6 to 10 cigarettes	-91	125	0,47	-86	127	0,50
11 or more cigarettes	-79	175	0,65	-128	180	0,48
Smoked cigarettes during the last 3 months of pregnancy						
No	Referent			Referent		
Yes	-264	114	0,02	-217	115	0,06
*Adjusted for alcohol consumption, smoking, maternal age, sexually transmitted infection, other current medical conditions, months pregnant at first prenatal visit.						

After controlling for smoking, sexually transmitted infection, other current medical conditions, and timing of the first prenatal care visit, women who consumed greater than or equal to one drink per week in the three months before pregnancy gave birth to babies weighing on average 324 grams more than babies born to women who did not drink during this time (MD=324 grams; SE=134 grams; $p=0.02$) (Table 4). Adjusted analysis of alcohol and birth weight showed that women who drank one or more drinks per week during the last three months of pregnancy gave birth to babies weighing on average 141 grams less than babies born to mothers who did not drink during this time, although these results were not statistically significant (MD=-141 grams; SE=130 grams; $p=0.28$).

After controlling for alcohol consumption, maternal age, sexually transmitted infection, other current medical conditions, and timing of the first prenatal care visit, there was no significant difference in mean birth weight of babies born to smoking and non-smoking mothers (Table 4). After controlling for confounders, women who smoked during the last three months of pregnancy gave birth to babies weighing on average 217 grams less than babies born to women who did not smoke during this time, although these results are not statistically significant (MD=-217 grams; SE=115 grams; $p=0.06$) (Table 4). After controlling for confounding factors, women who smoked before or during pregnancy gave birth to babies weighing on average 147 grams less than babies born to women who did not smoke during this time, although these results are not statistically significant (MD=-147 grams; SE=94 grams; $p=0.12$) (Table 4).

Discussion

In this cross-sectional study among mothers in Veliky Novgorod, we found that mothers who consumed greater than or equal to one alcoholic drink per week during the three months before pregnancy gave birth to babies weighing more than women who did not drink alcohol during this time, after adjustment for maternal age, sexually transmitted infection, other current medical conditions, and timing of first prenatal care visit. We observed some evidence that birth weight among infants born to mothers who drank alcohol during the last three months of pregnancy was modestly lower as compared to mothers who did not drink during this time but findings were not statistically significant.

Before controlling for confounders, we observed that women who smoked three months before pregnancy or during the last three months of pregnancy gave birth to babies weighing less than women who did not smoke during this time. We observed no significant difference in birth weight of babies born to mothers who smoked prior to or during pregnancy compared with non-smokers, after adjustment for maternal age, sexually transmitted

infection, other current medical conditions, and timing of first prenatal care visit. Although not statistically significant, we observed some evidence that babies born to mothers who smoked during the last three months of pregnancy weighed less than mothers who did not smoke during this time, after controlling for confounders.

The results of this study are consistent with the findings reported by previous studies that suggest smoking before and during pregnancy may lower birth weight in infants [3,7,10,14]. Prior studies have reported inconsistent findings on the relationship between maternal alcohol consumption and birth weight in infants [2,3,5,8]. The results of this study were consistent with the results of two previous studies that reported an inverse relationship between maternal alcohol consumption during pregnancy and birth weight [2,5]. Our results were consistent with the findings of one study that reported a positive relationship between alcohol consumption before pregnancy and birth weight [3]. It also seemed like our results were similar to Mariscal et al., with moderately higher birth weight among light drinkers [8].

The largely null findings of this study may be due to potential limitations in study design including bias and low power to detect a difference in birth weight due to small sample size. These limitations are described below.

It is possible that women underestimated their amount of alcohol consumption or smoking. These false reports may occur because women feel shame about having engaged in these behaviors before or during pregnancy. Thus, the effect estimate for the relationship between alcohol consumption, smoking, and birth weight would be underestimated. Because women were assured the information on the completed questionnaires were confidential, we believe the likelihood of non-differential misclassification of exposure is minimal.

Selection bias may occur in a cross-sectional study as a result of differential participation. In this study, 200 questionnaires were distributed to mothers and 181 completed questionnaires were collected. A total of six questionnaires were not used due to missing data or exclusion criteria. Therefore, there is a 91% participation rate. It is possible that mothers who drank or smoked before or during pregnancy and who delivered lower birth weight infants were less likely to participate in the study due to feelings of guilt at the possibility of being responsible for their child's negative health outcome. Had this occurred, our findings would have been underestimated. Because our participation rate is high, the likelihood of selection bias to affect results is minimal.

Conclusion

This study found that among a population of Russian women, birth weight of babies born to mothers who consumed greater than or equal to one alcoholic drink per week during

the three months before pregnancy were likely to give birth to babies weighing more than women who did not drink alcohol during this time after adjustment for maternal age, sexually transmitted infection, other current medical conditions, and timing of first prenatal care visit. This study found that after controlling for confounding variables, birth weight of babies born to mothers who smoke was not significantly lower as compared with non-smokers among a population of Russian women. Because of the small sample size, the results of this study should be interpreted as exploratory. Further research would be beneficial to the understanding of the relationship between maternal smoking, alcohol consumption, and birth weight among this under-studied population of Russian women. Because the prevalence of alcohol consumption and smoking among pregnant Russian women remains high, it is important to develop targeted public health programs to minimize these behaviors during pregnancy, in order to lower risk of negative birth outcomes including, potentially, low birth weight.

References

1. Barrientos et al. (2011). C. Low birth weight babies (percent of births). Index Mundi. Retrieved on September 1, 2011 from <http://www.indexmundi.com/>.
2. Borges et al. (1993). Alcohol consumption, low birth weight, and preterm delivery in the national addiction survey (Mexico). *International Journal of Addictions*, 28(4), 355-368.
3. Grjibovski et al. (2004). Housing conditions, perceived stress, smoking, and alcohol: determinants of fetal growth in Northwest Russia. *Acta Obstetrica et Gynecologica Scandinavica*, 83(12), 1159-1166.
4. Institute of Medicine. *Preventing Low Birth Weight*. Washington, DC: National Academy Press, 1985.
5. Jaddoe et al. (2007). Moderate alcohol consumption during pregnancy and the risk of low birth weight and preterm birth: the generation R study. *Annals of Epidemiology*, 17(10), 834-840.
6. Lundberg et al. (1997). Low-to-moderate gestational alcohol use and intrauterine growth retardation, low birthweight, and preterm delivery. *Annals of Epidemiology*, 7(7), 498-508.
7. Magee, B.D., Hattis, D., and Kivel, N.M. (2004). Role of smoking in low birth weight. *Journal of Reproductive Medicine*, 49[1], 23-27.
8. Mariscal et al. (2006). Pattern of alcohol consumption during pregnancy and risk for low birth weight. *Annals of Epidemiology*, 16(6), 432-438.
9. Matthews, T.J. (2001). Smoking during pregnancy during the 1990s. *National Vital Statistics Reports*, 49(7): 1-14. Retrieved on October 6, 2011 from <http://www.nmcphe.med.navy.mil/bumed/tcat/Tobacco/smoking%20during%20prg%20CDC%201990s.pdf>.
10. Ojima et al. (2004). Population attributable fraction of smoking to low birth weight in Japan. *Pediatrics International*, 46(3), 264-267.
11. Olson et al. (1997). Medical record validation of maternally reported birth characteristics and pregnancy-related events: a report from the children's cancer group, *American Journal of Epidemiology*, 145[1], 58-67.
12. Paneth, N.S. (1995). The problem of low birth weight. *Future Child*, 5[1], 19-34.
13. United States Surgeon General. The health consequences of smoking for women: report. Washington: United States Department of Health and Human Services, Public Health Service, Office of the Assistant Secretary for Health, Office on Smoking and Health, 1980. Retrieved from <http://profiles.nlm.nih.gov/ps/access/NNBBRV.pdf>.
14. Ventura et al. (2003). Trends and variations in smoking during pregnancy and low birth weight: evidence from the birth certificate, 1990-2000. *Pediatrics*, 111(5), 1176-1180.

Vita Glushchenko

**THE SITUATION OF FAMILY UPBRINGING IN TEENAGERS
WITH HYPERKINETIC DISORDER**

Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia

The term “hyperkinetic disorder” has been used in the international classification of diseases to determine the common infantile “syndrome of attention disorder with hyperactivity” (SADH) [1,3,7,8]. The systematic investigation of literature performed in 2007 by Harvard University has shown that the potential incidence of SADH in the world comprises 5,29 % [2,5,10]. The authors have noted the given syndrome in 11 % of children and 16,8 % of ambulant psychiatric patients in the USA; 3 % of children in Great Britain (Office for National Statistics Survey,2000); to 10 % of infantile population in Russia [1,3,4,5]. Alongside they have indicated that the incidence of SADH is dependent significantly on the presence of concomitant psychological problems and disorders [6,7,9]. Alcohol and narcotics abuse in adults has been mentioned as the long-term consequence of infantile hyperactivity, the children of parents with alcoholism, asocial psychopathy and affective disorders suffering SADH more commonly [2,6]. The resistance of the problem has been proved by the investigations of family heredity of hyperkinetic syndrome, the intravital behavioral impulsivity and impatience [4]. At the background of the syndrome biological, familial and social factors, such its manifestations as inclination to conflicts and any pathologic behavioral forms irrespective of age have been considered [5]. SADH is a polymorphic psychopathologic chronic syndrome classified in ICD-10 in the section of emotional and behavioral disorders which start usually in infantile and juvenile age but persist for the whole of life [1, 7]. It has been agreed that SADH is a biopsychosocial problem and its main etiology factors are biological ones but main prognostic factors are psychosocial ones, the behavior control presenting the most troublesome social problem. The lack of social experience necessary for successful social functioning and positive social role of a child is determined, among other factors, by the circumstances of family upbringing. Various unfavorable influences which lead to the absence of factors significant for social and psychological development of a child are termed in psychology as “psychic deprivation”. We have studied the situation of family upbringing of 194 teenagers aged 13-16 with SADH treated in Novgorod psychoneurologic dispensary. In the group observed we have distinguished the following forms of psychic deprivation:

- cognitive (the deprivation of meanings) with too changeable, chaotic structure of the surrounding world in the absence of distinct regulating and sense which doesn't allow to understand, foresee and regulate the environment;
- emotional (the deprivation of emotional relationships) with insufficient possibility of experience to establish emotional relationships;
- social (identity deprivation) with the limited possibility to adapt self-dependent social role.

In order to diagnose the level and the kind of deprivation we have analyzed and differentiated levels of social development of a child in the spheres of communication and infantile emotions, peers friendly affections formation, verbal competence, cognitive development, personal consciousness. We have revealed that in the group of SADH patients deprivative conditions of upbringing are present in $46,9 \pm 5,0$ % cases, including : lack of parents' care and control ($11,2 \pm 3,2$ %), emotional loneliness of children ($9,2 \pm 0,3$ %), the absence of educative and playing developmental experience in a child ($7,1 \pm 0,3$ %), intrafamily conflict between adults ($19,4 \pm 1,3$ %). SADH children have been functioning socially with moderate disorders (60-51 marks according to the scale of social functioning evaluation) [1,7] which manifest in poor school progress, limited social interests, not easy intrafamily relationships, conflicts with school mates and teachers. It is necessary to note that 32,1 % of the patients have had the disorders of emotional and personal attitude towards some school disciplines and the whole process of education, pedagogues as well as educational perspectives. Cognitive dysfunction manifests itself in the patients' poor capacity for work. Alongside with this, it was difficult for the children to establish aims, take tasks, think them over and plan their performance, to take and use help.

Emotional disorders in $28,6 \pm 2,4$ % of the patients have manifested within the limits of depressive condition due to which they had decreased work capacity for the significant part of school period. It has been noted the direct link between poor school progress and extraordinary situations in family (parents' divorce, the death of next of kin), catastrophic situations: in 6,12 % equally - conflicts between parents and residence change in the category of refugees; in 4,08 % - fire, car accident, flood, dog attack. The responses had the character of persistent emotional vegetative disorder. In $22,0 \pm 3,3$ % of the patients emotional tension has been combined with uncontrolled manifestation of various emotions. Some regressive phenomena such as episodes of enuresis have been noted. $12,6 \pm 1,6$ % of the patients had chronic alcohol dependence of one parent, the children from the given families having low capacity for work and poor school progress in some subjects. There were complaints at

frequent headaches in the structure of neurotic or neurosis-like condition clinically manifested in episodes of emotional behavioral dysfunction (fears, tics, stammering). Characteristic features of emotional disorders in the given group include the combination of depressive temper with worry, irritability, impatience, irascibility. Academic knowledge and skills didn't correspond the level of education being obtained, what has been evaluated as the result of unfavorable family situation. The behavioral disorders manifested in excessive motor activity, the absence of assiduity, the avoidance of tasks requiring assiduity, the loss of education activities control, special efforts to fulfill education tasks, tiredness and resultant education activities withdrawal, disorganization of every day regime, the decrease of stimuli control, voluntary activities regulation, non-adequate responses to social limitations, conflicts with school mates and teachers.

According to multi-axial system of ICD-10 classification for children with MCD manifesting hyperkinetic disorder [1], the diagnosis was made as follows:

Axis 1. Clinical psychiatric syndrome:

F90. Hyperkinetic disorder.

Axis 2. Disorders of psychological development:

F81.3. Mixed disorder of academic skills development (37,6 %).

F82. Specific disorder of motor function development (11,8%).

F83. Mixed specific development disorder (28,4%).

F89. Non-specific development disorders (21,9%).

Axis 3. Saved intellectual level.

Axis 4. Somatic and neurologic diseases:

G93.4. Encephalopathy unspecified.

Axis 5. Concomitant anomalous psycho-social situations (54,7%):

Z 55.8. Non-stability at school.

Z 55.4. Poor adaptation to educational process, conflicts with school mates and teachers.

Z62 Problems connected with a child upbringing (46,9±5,0), such as:

Z62.0. Parents' care and control non-adequacy (11,2±3,2).

Z 62.4. Emotional neglect of children (9,2±0,3).

Z 62.5. Absence of educative and playing developmental experience in child (7,1 ±0,3).

Z 63.8. In-family conflict between adults (19,4 ±1,3).

Axis 6. Evaluation of social functioning :

Code 60-51. Moderate disorders (poor school progress, limited social interests, difficult family relationships, conflicts with school teachers and mates)/

When we try to unite into a single system psychological functioning and the situation of children in-family upbringing, we can see that the phenomenon of SADH in the clinically interesting context as a diagnostic tool reflects external manifestations of socialization damaged mechanism. That is why we can evaluate SADH as a certain entity of signs and the evidence of disintegration of personal psychological characteristics of a child in the situation of pathogenic upbringing. Complex consideration of characteristics of a child's condition according to diagnostic vectors allows to individualize diagnostic and prognostic estimates, and to optimize on that basis the tactics of rehabilitation measures for a particular patient.

References

1. Пори Никол Практическое руководство по детско-юношеской психиатрии. Британский подход: Пер. с англ.- Екатеринбург: УралИНКО, УралЦДИ, 2001.- 224с.
2. Baeyens D.,Roeyers H.,Demeyere I. et al. Attention-deficit/ hyperactivity disorder (ADHD) as risk factor for persistent nocturnal enuresis in children: A two-year follow-up study // Acta Paediatr.-2005.-Vol.94,N11.- P.1619-1625.
3. Barkley, R. A. Attention deficit hyperactive disorder: A handbook for diagnosis and treatment (3rd ed.)- New York: Guilford Press, -2006.-688p.
4. Bellgrove M.A., Hawi Z., Gill M., et al. The cognitive genetics of attention -deficit/hyperactivity disorder (ADHD): sustained attention as candidate phenotype // Cortex.- 2006.- Vol.42,N6.- P. 838-845.
5. Biederman J., Faraone S. Attention –deficit hyperactivity disorder // Lancet.-2005.-Vol.366.- P.237-248.
6. Bloschi L., Depressed children: The role of the family // Int. J. Psychology, 1996.-v.31,issues 4.-P.146.
7. Diagnostic and Statistical Manual of Mental Disorders, 4-th Ed. — Washington, 1994.
8. Helmerich R. Historical Definitions and Nomenclatures of the Label “ADHD”: An Investigatin into Attention- deficit and Hyperactivity Behavior through Time.-Wisconsin-Stout: The Graduate School University of Wisconsin-Stout, 2006.-106p.
9. Redmond S.M., Thompson H.L., Goldstein S. Psycholinguistic profiling differentiates specific language impairment from typical development and from attention- deficit/ hyperactivity disorder // J.Speech. Lang. Hear Res.- 2011.- Vol.54,N 1.- P.99-117.
10. Skounti M.,Giannoukas S.,Dimitriou E., et al. Prevalence of attention deficit hyperactivity disorder in schoolchildren in Athens, Greece.Association of ADHD subtypes with social and academic impairment // Atten.Defic.Hyperact. Disord.-2010.-Vol.2,N 3.-P.127-132.

Elena Lukovitskaya, David R. Buchanan

REPRODUCTIVE HEALTH NEEDS OF TECHNICAL COLLEGE STUDENTS IN VELIKY NOVGOROD

*Yaroslav-the-Wise Novgorod State University, Veliky Novgorod, Russia
University of Massachusetts, Amherst, USA*

Abstract

The paper presents the findings of an analysis of five focus groups conducted with students ages 16-20 attending technical college in Velikiye Novgorod regarding reproductive health issues. The results show a high level of sexual activity, but low levels of contraceptive use and negative attitudes towards modern contraceptive methods. Despite public disapproval of abortion, the resort to abortion appears widespread.

Key words: reproductive health, contraception, abortion, technical college students, sex education.

Introduction

Many young people in Russia become sexually active early. According to one survey, 35% of females and 57% of males start their sexual life before the age of 15 [2]. Peers play a major role in the developing attitudes of young people by influencing them to initiate their sexual life early in order to appear cool [3].

The use of modern contraceptive methods in Russia is not high. During the last 10 years, the percentage of Russian women using contraceptive pills or IUDs has reached only 22-24% of women of reproductive age [5], compared to 80% of women in France.

Sociological data indicate that most parents are not ready to discuss sex with their children and expect schools to do it. According to the Russian Public Opinion Research Center, 81% of adults support sex education in schools and only 10% oppose it [3]. However, teachers, like parents, feel that they are not prepared to discuss sex; they believe that medical professionals should do it. These data indicate that, because sex education is a sensitive topic, many adults want to put responsibility for its provision on other social institutions.

In Russia, the standard school-based sex education program is oriented towards family values: “the aims of sex education should focus on the following topics: social and family welfare of both partners in marriage, abiding to the norms of sexual behavior, development of skills needed for harmonious sexual relationships and encouragement of healthy lifestyles” [1,]. Unfortunately, there is no national evidence-based sex education program for schools in Russia.

Research methods

This study examined the attitudes and needs of technical college students about sex, contraceptive methods, abortion, and responsible relationships. The sample population was consisted of five focus groups (2 male, 2 female and 1 mixed), made up of 16-20 year old students attending technical colleges in Veliky Novgorod.

The interviews were conducted by the lead author, using questions developed by international consultants. The audio files were transcribed and personal identifiers were eliminated. The names in the excerpts below have been abbreviated to protect the anonymity of the participants.

The interviews were analyzed using standard methods of content analysis. The first step involved open coding, identifying as many points of interest as possible. Codes were then compared, and where similar, collapsed into single topics. In the second step, the open codes

were grouped into major categories. Finally, using a process of constant comparative analysis, relationships among the codes were inductively organized into the final coding scheme.

Results

Sexual debut of young people

Students in the focus groups stated that people start their sex life early. They said that 90-95% of their peers are already sexually active. Their beliefs appear to be based on images in the mass media and the examples of parents and peers.

Well, they show so much on TV. (M., 16 years old, female)

I know because of some of my friends [have sex] . . . And I saw on TV some time ago that some had already given birth to children, while I was still playing hide-and-seek with my friends, and others already are taking care of babies. (N., 18, female)

I have a personal example. My Mom gave birth to me when she was 16 and she was sexually active at 15 (M., 16, female).

Some young women consider sex as proof of their love towards their male partners. In many cases, even when they are not ready for sexual activity, they tolerate sex, sometimes at risk to their own health, in order to please their partners:

Somebody's apartment. Binge drinking party. We went into the bathroom . . . I have pain again, but I try to tolerate it. I am scared because we do it without a condom. The only thought in my head: "I want it to be over ASAP" . . . Pleasure? Perhaps, moral. I gave into him all the time and let him abuse me. I was scared all the time, he did not like wearing condoms . . . He did not think about me. Never.

Role of Alcohol: Some participants stated that alcohol affects sexual desire because it makes "it really impossible to resist" (K., 17, male) and "totally unbelievable" (V., 17, male). *Usually one tries to find drunk young women for easy sex . . . It's much easier if a girl is drunk" (P., 17, male).* However, the majority of the male respondents said that most people have sex when they are sober: "more [when they are] sober . . . married couples" (P., 20, male); "80%, sober, 20%, drunk (Zh., 17, male).

Agents of Sex Education

Parents: The students indicated that parents are not a major source of information about sex; most do not want or know how to talk to their children about sex.

I think she [mother] is not really willing to talk about this issue . . . I think she knows what that [sexual relationship] means and does not say anything. She avoids everything related to that topic (Kr., 16, female).

Many young women do not seek advice from their parents because they are afraid of being scolded by them, or it may lead to serious consequences:

When my parents found out, they beat me quite badly that night. They were beating me all night long, with a belt, all over my body. I was trying to cover my face and breasts with my hands and they were hitting my hands. My father wanted to hit me at that place, so I would never do it with anyone else. Thank God, my Mom did not let him do it. He pulled me by my hair, threw me on the floor and kept hitting me with a belt in a fit of rage. It was really scary, especially because my parents never touched me before (A., 20, female).

Parents try to influence their children mainly by using the following three strategies:

1. Parents admonish their children with vague messages about cautious:

[My mom] simply used to say, "Be careful; think for yourself what to do." (N., 17, female)

They just said couple of years ago, "Protect yourself" and that's it . . . Then I was on my own, never discussed this again . . . I think they begin to exercise control only if there is some kind of crisis (Zh., 17, male).

2. Parents indirectly influence their children by telling them about their own or somebody else's negative experiences:

[My Mom] used to tell me about some of her friends' experiences, which were pretty negative . . . She used to describe the ways in which it can happen and what kind of consequences one can face (K., 16, female).

You cannot be sure of anyone, and there is nothing that lasts forever in this life . . . There are guys who, if you get pregnant, yes, they are irresponsible and will just leave you . . . alone with a child (Kr., 16, female).

3. Parents seek to build a relationship of trust so that the child internalizes expectations about behaving "in the right way":

My Mom knows that I know what I am doing, that I will never do anything bad and I do not have immoral life or something like that. (N., 18, female)

Schools: The participants said that sex education offered at schools is not satisfactory because schools provide only the most basic information. It is not always presented in an interesting way and often does not meet the youths' needs:

Well, I think we most probably had them [classes], but I did not attend them. . . I do not think that the school can teach you anything about these issues because, well, what does the typical student think at school? When one is told about something about some

subject, a person always thinks: “Why do I need this?” Everyone will just be smiling . . . Maybe someone will get some knowledge of the issues, but it will be a very small percentage of people (Z., 18, female).

Friends/Peers: The idea that it is embarrassing and unacceptable to talk about sex with friends is pervasive in conversations among peers:

Not really with friends . . . Well, I believe it is not really okay to talk about sex. I never noticed that my friends talked about it . . . We usually have some other topics for conversations (N., 18, female).

About sex? Yes. About contraception? No. Well, you do not need to explain it to most people. No one wants to have extra problems, meaning, having children at this age (Z., 18, female).

Other sources: The Internet has become the primary source of information about reproductive health issues for urban youth.

Now we can find everything on the net, it is so easy . . . we can search things on Google . . . I believe that not all people will go to their mothers. No matter what, people will use the internet nowadays, not books or their mothers’ advice. You can just search for “How to protect oneself” and you will get all the answers. And you do not have to stand there blushing in front of your mother asking: “Oh, Mom, how do I protect myself?” You just spend some time reading and looking at the images (N., 17, female).

The Internet is impersonal. Unlike talking to parents or teachers, youth do not have to deal with issues of trust or lack of trust and hierarchy on the Internet.

Beliefs about Contraceptives

The question, “With whom do you discuss the use of contraceptive methods?” caused embarrassed laughter among the female respondents. Almost everyone said, “*They did not discuss this with their mothers*” (L., 20, female); “*This is a forbidden topic*” (O., 16, female); “*It is assumed that this question is discussed after marriage*” (K., 20, female). They got a minimal amount of information from their mothers, mostly about menstruation; most information came from the Internet, the mass media, and doctors’ lectures.

Condoms: Both male and female students named condoms as the most common contraceptive method. However, when the relationship develops into a long-term commitment, withdrawal becomes the preferred method of contraception:

I find it [withdrawal] to be the best. If you have only one sexual partner for a long time, this method is the right one because you already know each other and . . . if a person really loves you, he will never do anything bad to you (Z., 18, female).

It seems to me that it [withdrawal] is the most widespread contraceptive method (P., 17, male).

Condoms are used less frequently in long-term relationships because: 1) they decrease sensation during sex; 2) they are not considered a reliable contraceptive method; 3) intercourse is more painful with a condom; and 4) they are expensive.

If, for instance, they already live together and do this every day, then I think it will be quite expensive. You will probably not spend that much even buying food (Zh., 17, male).

Males were more willing to have sex without condoms than females. Male students explained that condoms are used to “*make girls feel safe, to persuade them to have sex*”, and if they are not sure that they can “*interrupt sex on time.*” In general, young men assume that it is a woman’s responsibility to protect herself: “*If she needs it, she should get them [condoms]. I would not [spend] my money.*” (P., 20, male).

Young women stated that their partners frequently want to have unprotected sex. If young men do not want to use a condom, young women may reject having sex with him, or demand that he wears it. “*Women have their priorities. If a guy really wants to have sex . . . she will make him do what she wants*” (K, 17, male). One recalled that her boyfriend used to say “*to have sex with a condom is like swimming with boots on.*”

The young men had vague knowledge about contraceptive methods other than condoms. According to them, oral contraceptives and intrauterine devices have serious side effects: “*It is really harmful in any case*” (A., 17, male) and “*They can destroy your immune system*” (K., 17, male). They believe that females share these beliefs and, therefore, they are afraid and not willing to use them too.

Oral Contraceptives: The participants identified eight reasons for not using contraceptive pills. The most common concern was possible weight gain. As society pressures on women to be thin, many young women were concerned about their weight. “*A woman may get fat and I am really afraid of that*” (K. 16, female).

Another reason is the possibility of infertility: “*harmful to your health, you may not have children later*” (N., 18, female).

Another fear is due to exaggerated concern from health warnings [10]. Many young women scrutinize patient advisory leaflets and medical warnings about potential side effects:

I only heard about the side effects – diseases, I read the patient information about side effects. I do not understand some kind of illnesses . . . that you can get some illnesses using these pills. (E., 17, female)

Another concern is that oral contraceptives change a woman's normal cycle: *"I had my normal period disrupted in a crazy way by these pills"* (Z., 18, female).

Another reason was the development of addiction to the pill: *"Many pills cause addiction to them"* (N., 17, female).

Furthermore, pills do not protect against STIs: *"You may still easily get infected if you take pills"* (N., 17, female).

Oral contraceptives are also seen as inconvenient because they require regular consistent use: *"We were told during those ZOZH classes [School of Healthy Lifestyle] that they should be taken all the time and we should not forget to take them"* (L., 17, female).

Another important reason for not using birth control pills mentioned by the students is their high price. Most students still depend on their parents for money and have to save their pocket money to buy contraceptives.

I generally think that, if the pills are good, they cost a lot, more than 500 rubles . . . When I work, then 500 rubles is not a problem for me, but I am a student at the moment (N., 17, female).

Barriers

Young women are hesitant to go to an Ob-Gyn because of the long lines to get an appointment and see the doctor, and because of the rude attitude of medical personnel.

In terms of Ob-Gyn, it is better to pay money in a private clinic than to go to a public women's clinic, sit in line there and finally to get in front of an angry doctor who looks at you: "So dear, why did you come to me? Why don't you just get out of here?" (Z., 18, female)

I do not want to go to the state poly-clinics, people yell there. They also blame you: "Where did you get it from?" They should treat the disease and not discuss it. (S., 17, female).

Abortions

The majority of the female respondents stated that abortions are widespread. Despite the widespread resort to abortion, however, they stressed the moral offense of having an abortion: *This is a murder* (N., 18, female), with exceptions only for life and death situations:

I know some cases, when if the young woman would have given birth, she would have died. I believe that in such cases when the health is at stake . . . or there maybe some serious changes [in health status], an abortion should be performed. (E., 17, female).

But as the discussions progressed, they recognized that there are cases where it might be better to have an abortion:

If they will not have abortions, they will give birth to babies who will become criminals or drug dealers when they grow up . . . Well, so what if the girl is 16 and the child will be neglected and will have to take care of himself! Do you think he will grow up to be a good person? I do not think so . . . Look, how many homeless children we already have. They are in rags and their parents just do not care about them. That's it! (N., 18 female)

Although attitudes towards abortion were generally negative, in reality, if a woman gets pregnant at an early age, those attitudes do not determine her behavior, especially if the pregnancy occurred as a result of a random sexual encounter or sex while intoxicated.

Conclusion

The students in this study know about many of the risks of sexual behavior, but are unfamiliar with modern contraceptive methods. Individual, cultural, and socio-economic factors influence the sexual attitudes and behaviors of young people today. Among individual factors, we heard repeatedly about the lack of conversations about contraceptive methods, and young people typically assume that it is the woman's personal responsibility.

Among social factors, we found distrust of hormonal and other modern contraceptive methods. This attitude was widespread during the Soviet times and still remains strong among the current generation of young people.

Regarding abortions, we found a sharp dichotomy between expressed attitudes "in theory" and actual behaviors when the issue becomes personally relevant [4].

Regarding socio-economic issues, the difficulties in accessing services and the harsh attitudes of physicians towards young patients posed major barriers to seeking contraceptive advice from medical clinics.

The social and demographic characteristics of Veliky Novgorod are typical of cities in northwestern Russia, and therefore, the findings revealed in this research regarding sex, attitudes toward contraception, and abortions may be representative of the majority of the population in northwest Russia.

References

1. Federal Government Statistical Office. V. Novgorod, 2010.
2. Kon I. Strawberries on the birch. Sexual culture in Russia. – M.: «Vremya», 2010.
3. Kon I. Youth sexuality at the beginning of the 21st century. Socio-pedagogical analysis. – Dubna: «Phoenix+», 2001.
4. Temkina A. What makes sex «dangerous». Patterns of contraceptive use among modern Russian youth Accessed at <http://www.polit.ru/country/2011/03/24/contr.html>. 2011.
5. Vishnevsky, A. G. (Ed), Population in Russia, 2006. 14th annual demographic report. Moscow, GUVSHE, 2008.

CONTENTS

1.	Buchanan, D. R.	Foreword	3
2.	Buchanan, D. R.	The distinct purpose and essential functions of public health care system compared to the delivery of medical services in the United States	5
3.	Pevzner, M.N. Kaminskaya, E.Y.	Academic programs as a tool for international strategic partnerships	14
4.	Proshina, L.G. Grigor'eva, M.V. Fedorova, N.P.	Optimisation of students' independent work in morphological disciplines for improvement of quality of education from the standpoint of new educational standards	21
5.	Lisitsin, V.I. Fedchenko, P.Yu.	Regional dynamics of main causes of mortality	24
6.	Azovtzeva, O.V. Arkhipov, G.S. Buzunova, S.A Arkhipova, E.I.	HIV infection epidemic and its prevention principles	32
7.	Carbone, E.T. Buchanan, D.R.	The utility of community-based participatory research to address chronic diseases	45
8.	Linowski, S.A. DiFulvio, G.T.	An intervention to decrease high risk drinking among college students	53
9.	Araeva, N. Nevalennaya, A. Buchanan, D.R.	Public policy, citizen voices and responses to declining fertility in post-soviet Russia	60
10.	Mooza, J. Mishecurin, V.Y. Nikitina N.N.	Maternal alcohol consumption, smoking, and birth weight in infants born in Veliky Novgorod, Russian Federation	71
11.	Glushchenko, V.V.	The situation of family upbringing in teenagers with hyperkinetic disorder	82
12.	Lukovitskaya, E.G. Buchanan, D.R.	Reproductive health needs of technical college students in Veliky Novgorod	85