

Review Article

Dynamics of Structure and Size of Social Cost of Drug Addiction in the Samara Region

SA Tsarev*

The State Budget Institution of Health Care "The Samara Oblast Clinical Narcologic Dispensary" of the Minzdrav of the Samara Oblast, 443085, Samara, Russia

INTRODUCTION

Now there are several techniques of assessment of damage from various diseases causing certain social and economic damage to society. Generally similar works are devoted to harm assessment from cardiovascular, infectious diseases and a number of the diseases anyway connected with environmental pollution. Attempts to assess damages to society of such phenomenon as drug addiction; it was also repeatedly undertaken by foreign authors [1].

The analysis of scientific literature shows that now in Russia there is a number of the works devoted to studying the economic damage caused to society by spread of drug addiction. In particular, the group of authors of the Ural office of the Russian Academy of Sciences defined damage from drug addiction [2] in which not only calculation of social cost of drug addiction Federal districts and the Russian Federation in general is made, but also influence of such phenomenon as drug addiction, on social and economic development of society is estimated. Attempts to estimate the size of social cost of drug addiction were also made in the Samara region [3] earlier. However, distinctive feature of this research is assessment of this size repeatedly in the same territory, 10 years later.

Research Objective

To estimate the total value and structure of Social Cost of Drug Addiction (SCDA) in the Samara region and also top trends on their change during 2017 - 2020.

Research Technique

For assessment of size of social cost of drug addiction in the Samara region, the principles of her definition developed by experts of Group of Pompidou of the Council of Europe [4] were used. Also in work, the recommendations developed during evaluating social cost of drug addiction in the Russian Federation were considered. This technique allows defining and damaging from spread of drug addiction in society. Only those components

*Corresponding author

SA Tsarev, The State Budget Institution of Health Care "The Samara Oblast Clinical Narcologic Dispensary" of the Minzdrav of the Samara Oblast, 443085, Samara, Russia.

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of calculation of social cost which are connected with additional expenses, which are incurred by the state and society because of spread of drug addiction (additional budgetary expenses, the half-received products, premature mortality of citizens, etc.) will be considered in this case.

It agrees article of a technique used by authors, the total value of social cost of drug addiction in the region consisted of cumulative expenses of society and citizens in the state and non-state spheres. In turn, the social cost in the state sphere will be determined as the sum of expenses in segments: cost of social consequences of drug addiction, expenses of law enforcement, judicial authorities, and systems of execution of punishments, expenses on health care and preventive programs. The cost of expenses in the non-state sphere is presented generally by expenses of consumers of the drugs and persons surrounding them on their acquisition.

RESULTS AND DISCUSSION

Further calculations of sizes of social cost of drug addiction in the Samara region in each of segments are presented.

Cost of Social Consequences of Drug Addiction

Calculation of social cost of drug addiction in this segment is carried out in demographic and production spheres on the basis of the following indicators.

Damage from Mortality Because of the Use of Narcotic Substances

Determination of economic damage to society from premature mortality on the basis of the given short gross regional product (GRP) calculates as the work of the sum, the dead who aren't lived by a certain set until the end of working-age of cheloveko-years and a share of VRP (in rub) falling on one occupied in economy in the corresponding year, taking into account coefficient of employment of representatives of this cohort in region economy. The received value will correspond

to the damage caused to economy for all not lived years. As this technique assumes calculation of annual losses, we will divide this size into average age of not survival. Believing that each dead is replaced in economy same year, we cannot consider losses from not lived years following settlement.

Damage from the Underutilization of Products as a Result of the Involvement of the Population in Drug Addiction

By the user of drugs we will mean a cohort of people, the number of which, like a percentage of the total population of residents of the Samara region, is determined annually during the monitoring of the main indicators of narcosis of the region. According to earlier calculations, the ability of such a person to work is reduced by 56%. Thus, in this case, economic damage is considered as the difference between the labor productivity of a drug user employed in the economy and a healthy producer of GRP, multiplied by the number of drug users employed in the production of GRP. The calculations took into account the previously determined in the course of the studies: the employment rate of the IDU in production, as well as the labor productivity rate of the working IDU with addiction syndrome.

HEALTH CARE COSTS AND OTHER SOCIAL COSTS

The social cost of drug addiction in the segment of health care costs is calculated on the basis of the following indicators.

Costs of Training, Advanced Training and Retraining of Doctors and Paramedical Personnel Specializing in Drug Addiction Treatment

It is defined as the product of the number of specialists trained in this year with higher and secondary medical education by the average cost of the training course.

Budgetary Expenses for Providing Ambulance Service Departures for Applications of Persons Using Narcotic Substances

It is defined as the product of the number of trips of emergency teams related to the provision of medical care to drug users due to their use by the average cost of one trip in a given year.

Costs of Inpatient Drug Dependence Treatment in Public Health Facilities

It is defined as the product of the number of hospitalizations for drug addiction treatment by the cost of one hospitalization (according to the approved standard).

Outpatient Drug Addiction Costs

It is determined on the basis of the ratio of expenses for inpatient and outpatient treatment of drug addiction determined earlier based on the results of studies. In this study, the ratio of inpatient treatment costs to outpatient treatment costs in the structure of total drug treatment costs in Russia was determined as 65% to 35%.

Budget Expenditures for ARVT in Persons Infected with HIV during Drug Use

It is defined as the product of the number of people infected with HIV with drug use and receiving ARVT this year by the average cost of antiretroviral therapy.

Expenses for the Maintenance of Law Enforcement Agencies Controlling Drug Trafficking

The calculation of the social cost of drug addiction in this segment is provided by the federal budget for the maintenance of the Drug Control Department of the Main Directorate of the Ministry of Internal Affairs of the Russian Federation for the Samara Region.

EXPENSES FOR THE MAINTENANCE OF THE JUDICIAL SYSTEM

The calculation of the social cost of drug addiction in the segment of expenses for the maintenance of the judicial system is presented by the federal budget and is carried out on the basis of the number of cases (criminal and administrative) considered by the courts of the Samara region.

Expenses for the Maintenance of the Penitentiary System

The social cost of drug addiction in this segment is calculated on the basis of the costs of maintaining prisoners serving sentences on charges of crimes related to the sale of narcotic substances.

Expenses of Drug Users and Those around Them

The calculation of the social cost of drug addiction in the segment of drug consumption costs takes into account a study conducted earlier to assess the number of drug users in the Samara region, taking into account the latent component, and is carried out on the basis of summing up the costs of purchasing narcotic substances, and the costs of purchasing precursors, medicines, tools for the manufacture and use of narcotic substances (Table 1). The calculations took into account those determined by the questionnaire of drug users: the number of injections per day of each of the narcotic substances, as well as the average number of days of use per year.

Total Costs of Preventive Programs of Various Levels

The calculation of the social cost of drug addiction in this segment takes into account the costs of federal and regional programs.

The following is the final table, which indicates the estimated values of the social value of drug addiction in the Samara region as a whole and in various segments that make up it in dynamics from 2017 to 2020.

For the overall assessment of the amount of social burden

Table 1:

	2017	2018	2019	2020
Expenses for maintenance of law enforcement agencies, thousand rubles.	1219689,09	1094733,36	1278925,79	1382466,76
Expenses for the maintenance of the judicial system, thousand rubles.	54373,23	66228,64	67305,35	60479,60
Expenses for the maintenance of the penitentiary system, thousand rubles.	1068617,27	974345,23	1270095,43	1712183,90
Expenses for various preventive programs, thousand rubles.	23308,00	25435,00	16296,00	25867,00
Expenses of drug users, thousand rubles.	13177401,42	18825759,30	15832356,27	16241495,80
Health care costs, thousand rubles.	370064,68	447855,63	412377,02	348111,46
Social consequences of drug addiction, thousand rubles.	4838508,84	8093547,94	7047825,42	6871711,63
Total SCDA, thousand rubles.	20751962,52	29527905,12	25925181,30	26642316,16

Table 2:

	2007	2008	2009	2010
GRP	1 449 005 713,10	1 625 558 655,60	1 689 575 399,20	1 599 553 952,50
Population of Samara region	3 203 679	3 193 514	3 183 038	3 179 532
SCDA to GRP,%	1,43	1,81	1,53	1,66
SCDA per 1 resident of CO, rub.	6477,54	9246,21	8144,79	8379,32

imposed by drug addiction, the following indicators are most often used: the ratio of the value of SSN to the gross regional product, and the value of the social cost of drug addiction in terms of one inhabitant of the region (Table 2).

CONCLUSION

The large-scale spread of drug use leads to significant damage that is caused both at the individual and population levels. Determining the amount of economic damage caused by illicit drug consumption is therefore the most important task facing health care. The study shows that the damage caused by drug addiction in the Russian region can be 1.5-2% of the gross regional product.

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