

UDC 613.81

DOI: 10.21668/health.risk/2017.4.15.eng

ALCOHOL CONSUMPTION AS A FACTOR CAUSING RISKS FOR POPULATION HEALTH (RUSSIAN RESEARCH REVIEW)*

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Our review comprises medical and sociological research conducted over the last 20 years and dedicated to examining reasons and consequences of alcohol consumption in the Russian Federation. We detected that this research covered a wide range of issues starting from analyzing social contexts of alcohol consumption, micro-social, psychological, and biological factors causing alcohol-associated behavior in specific population groups, and then moving on to examining prevalence and gravity of medical and economic consequences which alcohol consumption usually leads to. We dwell on research results which explain reasons for alcohol consumption in various social and age population groups. We also describe different approaches to risk assessment procedure, assessment techniques and criteria applied for characterizing risks. We give concrete data on this bad habit prevalence in a number of the RF regions as well as data on medical-demographic losses caused by alcohol consumption.

It is shown that the issue is recognized at the federal level and a number of political and administrative steps are taken to minimize it. We stress the necessity of closer cooperation between experts, authorities, and population in the process of solving tasks aimed at making our society healthier. We also reveal that risk-communication as a dialogue model is replaced with an information model; and the absence of "feedback" from risk recipients doesn't allow to adequately adjust information flows or to assess their efficiency. In our opinion, the most important task is to build up relevant risk-communications in the society as they will provide searching for most efficient dialogue techniques in the risk-communication system on alcohol addiction reasons and consequences. New risk-communication technologies should make for better risk awareness among population, above all among young people, as well as for creation of persistent attitude towards giving up alcohol as self-preserving behavior.

Key words: alcohol consumption, population, reasons, health risk, risk assessment, risk-communications, health recovery.

Alcohol abuse is one of the gravest medical and social problems not only in Russia but all over the world. Alcohol holds the third place among risk factors for untimely death, disability, and health loss [22, 58]. In 2012 DALY index, a parameter which shows aggregate "load with diseases" and which is a linear sum of potential years of life lost due to untimely death and disability, calculated for disorders caused by alcohol abuse, amounted to 32.03 million person-years (1.2% of the total load with diseases). The share of economically developed countries (including the Russian Federation) in this value amounts to more than 35% (11.4 million person-years lost).

For comparison, in 2000 this parameter value was equal to 28.98 million person-years (1% of the total load with diseases) worldwide, and 11.32 million years (3% of the total load with diseases) in economically developed countries. For the latter, disorders caused by alcohol abuse are on the seventh place among leading reasons for loss of years due to untimely deaths and disability for people living with a disease or its consequences.

In conformity with "The Russian Federation National Security Strategy for the period up to 2020" approved by the Presidential Order No. 537 on May 12, 2009¹ alcoholism is acknowledged to be a

threat to the national security in the public healthcare and national health sphere. The significance of this medical and social problem is confirmed by multiple scientific publications which focus on examining impacts exerted on health by alcohol consumption. Thus, target search as per such key words as "alcohol", "consumption", "abuse", "risk", and "health" in titles of papers stored in eLIBRARY.RU scientific e-library (<https://elibrary.ru/>) revealed that in 2000-2006 Russian scientists published more than 2,000 works on various issues and aspects related to alcohol consumption and its impacts on somatic, mental, and social health.

Medical research mostly dwells on clinical pictures of alcohol-associated pathologies, and ways how to diagnose and to treat them. Sociological research concentrates on alcohol consumption prevalence in various social groups, among men and women, youth and working population, school children and students, people living in various municipal districts and RF subjects. Experts in the field study life quality dynamics in these groups in relation to alcohol-associated practices as well as social perceptions about alcohol, attitudes towards it and proneness to consume it. Psychological research focuses on analyzing personal peculiarities of individuals who have positive, neutral, on negative attitude towards alcohol, on behavioral consequences of alcohol consumption in various age groups, and on psychological reasons for alcohol consumption.

Our research goal was to systematize and generalize domestic scientific research

works published in 2000-2016 and dedicated to alcohol consumption as a health risk factor.

Results and discussion. Problems related to influences exerted by alcohol on individual and population health have traditionally attracted attention not only of Russian medical experts but also of sociologists and psychologists. So, a great number of works have been published in the sphere over the examined period and they are mostly dedicated to analyzing social contexts of alcohol consumption prevalence as well as micro-social, psychological, and biological factors causing alcohol-associated behavior in specific social groups, notably, among young people [1, 7, 39]. A.V. Golenkov et al. (2009), S.S. Gordeeva (2016) and others pay special attention to social attitudes, standards, and values promoting alcohol consumption prevalence among population as a whole and in specific groups [13, 14]. For example, S.S. Gordeeva states that wide spread of information about alcohol consumption in mass media, hidden beer advertising and hidden advertising of other spirits makes teenagers think that alcohol is truly attractive. This research results correlate well with the data obtained in the course of the examination performed by the Federal State Statistic Service in 2013 and entitled "Sampling observation of behavioral factors influencing population health"² [10]. When asked "Why do you drink alcohol?", 79% respondents answered it was a tradition to hold celebrations with spirits. Russian teenagers and young people aged 15-19 chose such answers as "a tradition

¹The Russian Federation National Security Strategy for the period up to 2020: The RF President Order No. 537 dated May 12 2009. Available at: http://www.consultant.ru/document/cons_doc_LAW_87685/ (26.02.2017)

²Sampling observation of behavioral factors influencing population health 2013. Federal State Statistic Service, 2013. Available at: http://www.gks.ru/free_doc/new_site/ZDOR/Sdp2013.Bfs.Publisher/index.html (09.09.2014).

to hold celebrations with spirits" (67%), "it makes holidays brighter and helps to have a great time" (29%), "it helps me to calm down and brings me pleasure" (15%), "most people do it" (13%).

Domestic researchers pay special attention to alcohol consumption models (N.V. Goryacheva, 2003; V.V. Radaev, 2016). They came to conclusion that "strong spirits consumption" pattern dominated in Russia in the early 2000 [15], as well as on transformation of this typical model nowadays and changes in a "several alcohol consumption style", traditional in our country [36, 49].

There is also interesting research combining social and medical approaches to analysis of correlation between alcohol and health. Thus, experts from Saratov State Medical University examined influence exerted by various alcohol consumption models on cardiovascular risk evolvement in working population of Saratov and Engels. Cardiovascular risk was shown to go down when a consumption model aimed at low alcohol spirits was implemented [35].

Actual medical research works focusing on examining alcohol consumption as a health risk factor can be divided into four groups.

The first group comprises works devoted to determining and proving correlations between alcohol consumption and negative effects (responses) from health on an individual level. Thus, M.V. Markina in her works (2016) states that alcohol consumption is one of the basic causes for psychoneurological disorders [32], V.O. Generalov et al. (2009), and M. Leone et al. (2012) consider it one of the basic causes for epilepsy [11,28]. There are works describing a significant role alcohol plays

in evolvement of some non-infectious diseases, for example, cardiovascular ones [12,37,50], and liver cirrhosis [2, 24]. Sanitary-Epidemiologic Requirements No.1.2.2353-08 "Carcinogenic factors and basic requirements to carcinogenic threats prevention"³ enlists alcohol among chemical factors which are hazardous for people and thus stresses alcohol significance as a carcinogenic risk factor. Some researchers rightfully state there is a correlation between some types of cancer and alcohol abuse (I.L. Klyaritskaya, 2007; N.A. Malofeevskaya, 2015; O.V. Reshetnikov et al., 2016 and others.). Thus, there is a positive correlation between alcoholism, alcoholic psychosis and increased morbidity and mortality caused by tumors in the stomach, esophagus, colon, rectum, liver, and lungs [26,31,51].

Research performed in Izhevsk in 2002 revealed that male mortality among working population was to a great extent determined by "hazardous alcohol consumption", notably, non-drinkable alcohol consumption [6].

The second group comprises research on negative influence exerted by alcohol consumption on specific social risk groups which are especially vulnerable, notably, children in perinatal period of their development and newborns [16,54,55].

Influence exerted by a mother's behavioral addiction on a fetus development was examined by Yakut scientists who described alcohol teratogenic effects, intrauterine growth retardation, skull development dismorphism, and irreversible changes in the central nervous system [16, 29,30]. A.B. Palchik and N.P. Shabalov et al. [43,44], highlight intrauterine exogenous intoxication as a cause for intrauterine

³Sanitary-Epidemiologic Requirements 1.2.2353-08. Carcinogenic factors and basic requirements to carcinogenic threats prevention. Available at: <http://docs.cntd.ru/document/902101545> (25.07.2016)

teratogenic effects and such their consequences as congenital malformations and minor maldevelopment. Their works are well in line with data obtained in other research, including by foreign experts, where fetal alcohol syndrome is also shown to be a consequence of intrauterine ethanol effects on a fetus. And this syndrome is, among other reasons, a leading one for mental retardation (J.Bertrand,2004; V.I. Shilko et al., 2009; S.M. Zimatkin, 2013) [21,63,67].

Young people (teenagers under 18 and young people aged 18-24) are considered by most scientists to be another population group prone to alcohol addiction evolution. An issue of alcoholism getting "younger" has been discussed by Russian scientists for a long time (B.A. Ruchkin, 1998) [52]. Research performed in the recent years prove that age of people who systematically drink alcohol has become substantially younger [22]. In 2010 mortality analysis performed on young people revealed that 6% of overall deaths were caused by psychoactive substances abuse or intoxication, and 5%, by alcohol intoxication [3]. Teenagers and young people are unprotected, first of all, due to medical and psychological age peculiarities of a body and personality development. G.A. Novikova described peculiarities of effects exerted by low alcohol drinks, notably beer, on teenagers and proved there were negative shifts in sensory-motor and psychodynamic processes and changes in functional asymmetry and cerebral biorhythms at various levels of beer alcoholization [39]. A.A. Kirpichenko and I.A. Uvarov showed in their works that systematic alcohol drinking at younger ages, including young females drinking, was one of predisposing factors for alcoholism and tended to turn into chronic alcoholism earlier and faster, apparent alcohol depend-

ence and asocial actions, crimes, and lower social status which were usual by-effects of chronic alcoholism [25, 62]. Alcoholism, in addition to all that, causes menstrual cycle disorders and increased risk of unwanted pregnancy for young women [27, 41]. M.S. Ponomareva stated in her work (2013) that damage done by alcohol abuse to young people was twice as high than in case of other age groups. Besides, drunken young people got into car accidents or behaved dangerously more frequently than drunken adults [46].

The third group comprises research related to population health which often deteriorates due to high alcohol consumption prevalence [33, 60, 64]. Authors of such research mostly analyze statistical parameters which characterize population health and calculate economic losses of countries or specific regions caused by health losses associated with alcohol abuse by population. For example, shorter life span in Russian in comparison with most developed countries and high population mortality are closely related to alcohol addiction considered in works by E.M. Andreev, A.A. Korneshov, E.A. Koshkina, A.N. Perezhogin et al. and others [4, 5, 6, 23, 27, 33]. Experts also dwell on considerable share of overall load with diseases caused by incidental and deliberate injuries, including car accidents (overall number of accidents caused by drunk drivers amounted to 15,344 in 2015, and to 15,669, in 2016), violence, and suicides [53, 60]. For example, M.Leone and A.Ivashinko stated that "in Russia in 2016 a number of people who committed crimes under alcoholic intoxication amounted to 395.3 thousand people that was 11.5% higher than in the previous year" [28].

This group of works also includes local (municipal or regional) research [19, 38, 47, 48,57]. As a rule, such research

concentrates on alcohol consumption prevalence or alcohol-associated mortality and morbidity on a specific territory and on highlighting their impacts on this territory economy. For example, research conducted in Irkutsk region [4, 5, 18] revealed that there was a correlation between alcohol consumption and population health. The authors detected an authentic correlation between alcohol consumption and average life span of Irkutsk region population ($r=-0.5$), congenital malformations ($r=0.72$), 0-1 year old children mortality caused by congenital malformations ($r=0.71$), and population mortality caused by accidental alcohol intoxications ($r=0.8$). The authors also detected an authentic direct and strong correlation between such a parameter as "population mortality in Irkutsk region caused by accidental alcohol intoxications" (as a parameter characterizing a poor situation with alcohol consumption), and parameters of mortality due to specific nosologies and death causes including injuries and intoxications ($r=0.94$, $p < 0.001$), vascular brain damages ($r=0.8$, $p < 0.05$), and cardiovascular system diseases ($r=0.8$, $p < 0.05$). So it was proved that alcoholization level and hazardous consequences related to it was determined by alcohol consumption volumes.

Experts from Murmansk region analyzed statistical parameters and revealed that if mortality caused by alcohol intoxications among population older than 15 increased by 1 case per 100,000 people, then mortality caused by injuries increased by 1.8% among men and by 1.7% among women. On average, additional share of mortality caused by injuries and related to alcohol consumption amounts to 24.6% among men and to 23.4% among women

[65].

Retrospective analysis of 1,000 morbidity cases with circulatory system diseases in Chuvash Republic conducted in 2000-2010 allowed to prove alcohol abuse was a significant risk factor for such diseases evolution [66].

Alcohol consumption volume is considered to be one of the most significant factors influencing decrease in average life span and mortality growth among Moscow population [40].

And finally, the fourth group dwells on quantitative predictive estimate of risk associated with alcohol effects on people health [8, 42]. Some research is based on algorithms and risk assessment techniques stated in the methodological Guidelines entitled "Assessment of risk related to impacts exerted by life style factors on population health" (MG 2.1.10.0033-11)⁴. Thus, R.V. Buzinov and T.N. Unguryanu assessed alcohol-associated individual risk for ischemic heart disease (IHD) evolution among adult population in Arkhangelsk region [9]. They detected that IHD risk related to alcohol consumption among the population living on the examined territory was "alerting" ($4.1 \text{ E}-04$) in the age group from 40 to 49, and "high" in the age group "50 and older" ($1.6 \text{ E}-03$ for 50-59 age group and $1.5 \text{ E}-02$ for 60 and older). D.M. Shlyapnikov et al. examined workers employed at industrial enterprises and showed that workers who consumed alcohol and who were exposed to industrial factors (the focus group) ran authentically higher risk of digestive organs diseases than workers from the control group [59].

We should note that a number of works concentrating on profound examination of reasons for individual and popula-

⁴MR 2.1.10.0033-11. Assessment of risk related to impacts exerted by life style factors on population health. Available at: <http://36.rospotrebnadzor.ru/documents/rekdoc1/9539> (20.04.2017)

tion alcoholism and on ways how to minimize risks for society alcoholization is substantially lower than a number of research works dwelling on the phenomenon itself (that is, experts examine "alcoholism as a reason and risk factor..." but not "reasons and risk factors which cause alcoholism").

Overall, researchers state that alcoholism results from destruction of a family as a social institution and old habit of domestic hard drinking which is considered to be "harmless". A.V. Merinov (2010)[34], A.V. Nemtsov (2008) [38], and M.V. Pastukhova (2010) [45] state that domestic hard drinking and stressful situation in a family are risk factors causing alcoholism involvement among teenagers and children. Some researchers mention that alcoholism results from poor leisure culture which young people have [57]. N.V. Romanova et al. (2008) note that a certain "negative contribution is made by modern literature, mostly translated one, which, together with cinema, praises those who are being relaxed and have free-thinking but such behavior turns out to be just permissiveness..." [56]. A. Yu, Efremov and L.A. Kazaryan showed that alcoholism prevalence was promoted by social insecurity, loss of life goals by young people, their value disorientation, and their life being meaningless [17].

A.Yu. Bushkova (2013) also gives some well-grounded reasons for alcoholism. Examining historical roots of alcoholism in Russia, she cites baron Ginzburg, an owner of large industrial enterprises, who said, "I get more gold from vodka deliveries to state wine stores and from industrial distillation than from all my gold mines ... state sales of hard drinks should be preserved at any costs and it should be somehow justified in public opinion's eyes... ". The author also reminds that the country rulers in 90ties last century strove to in-

crease state budget earning by alcohol sales growth and privatization of alcohol-producing plants, and it caused drastic increase in population alcoholization [10].

The state officials nowadays fully understand the problem is serious and they take on the responsibility for finding solutions; so legislative and administrative measures are taken to achieve decrease in the country population alcoholization. In recent years, punishments for drunk driving have become substantially harder; alcohol products advertising has been prohibited; struggle against counterfeit products has also intensified as the country budget has lost more than 31 billion rubles due to them. The state continues to develop and implement anti-alcohol policy [61]. In 2015 The Unified State Automated Information System was implemented into wholesale and retail alcohol trade as one of a key measures aimed at alcohol market stabilization. Extrajudicial blocking of web-sites which sell alcohol illegally is now permitted. The government issued a decree allowing to destroy all the production equipment right there where alcohol was illegally manufactured. However, such measures require active support by the civil society. In relation to that, we see healthy life-style propaganda and promotion as one of the most significant trends in minimization of alcohol-associated demographic losses (death cases, disability, and morbidity). But it undoubtedly requires search for new types and techniques of risk-communications. Alcohol products variety is constantly growing, trade barriers are being removed, state surveillance and control functions are becoming more liberal, and other social-economic processes are developing, and it all calls for transfer to a new paradigm for discussing health risks caused by alcohol consumption (risk-communications).

Strategically a risk-communication means a special interaction between "all the involved parties" (risk manufacturers and risk consumers, as well as mediators) concerning a risk and this interaction should be based on openness, trust, and equality. Decision-making in risk management sphere and plans how to implement all the taken decisions are to be developed and performed by experts, authorities, and the society together. Solutions to these tasks involve clear perception that a risk is not exceptionally an objective and cognizable fact; it is always mediated by social and cultural stereotypes and processes [20].

At present, this model is often replaced by its "prototype" and we have simple informing instead of a true risk-communication. And here absence of a feedback from risk recipients doesn't allow to adjust information flows correctly or to assess how efficient they are. Sociological questioning conducted in the RF usually prove these hypotheses. Consequently, we have to face risk underestimation by consumers. Risk-communication issues and attempts to find new ways and techniques are being discussed by the country scientific society, however, foreign research works on the topic have much larger scales and are much more diverse.

A way to build an efficient multi-sided communication system on alcohol evolution risks and its consequences is to increase information activity of the population and to raise their interest in safety matters; to achieve not only high population awareness about risks but also to create persistent attitudes towards self-preserving behavior; to improve the state system of risk-communications in the population health sphere. It is greatly important to fully use information spread channels which are in demand among a target audience (for

example, active social media incorporation), to create conditions for public discussions about risks. A tactic task is to provide methodical support for all the concerned parties in terms of ways and media applied for presenting data on health risks; these ways and media should be relevant for a specific target audience. Another significant way to increase risk-communications efficiency is more active involvement of the experts society into a constructive discussion about risks. As population tends to trust experts, scientists, or doctors more than they trust public authorities, representatives from these groups are to play their important social role in an efficient data exchange system.

Conclusions. Contemporary research works on alcohol consumption as a health risk factor are numerous and diverse. There are medical examinations dwelling on analyzing "factor - response" relationships (where alcohol consumption is a factor, and a somatic or a mental pathology is a health response); but there are also works which concentrate on micro-social, social-demographic and socio-cultural consequences of alcohol consumption at a country, regional, or a local level, or on a contribution which alcohol makes into "social ill-being" of a person and a nation as a whole.

A specific research field is where experts deal with alcohol consumption factors which have biological, psychological, or social nature, as well as with alcohol consumption models in various age, ethnic, territorial, and other groups. Methodological issues related to assessing risks associated with alcohol consumption impacts on population health are being discussed in Russian scientific publications: experts describe different approaches to risk assessment procedure implementation, risk assessment techniques, and risk assessment

criteria. At the same time, suggested theoretical and methodological approaches still don't find sufficient practice implementation. It partially happens due to weak integration of actual results obtained in examining correlations between alcohol consumption and health into the existing techniques for assessing alcohol-associated risks.

Examination of most efficient tech-

niques in a risk-communication dialogue system devoted to reasons and consequences of alcohol addiction in the society should become a separate important trend in scientific research in the field, together with searching for new ways and techniques aimed at supporting "self-preserving" and "low-risk" behavior among young people.

References

1. Aleinikova T.V. Predstavleniya o vozrastnoi periodizatsii ontogeneza cheloveka [Views on age periodization of human ontogenesis]. *Vozrastnaya psikhofiziologiya*. Moscow, Feniks, Publ., 2007, Chapter 1, pp. 5–10 (in Russian).
2. Alkogol'naya bolezn' pecheni i alkogolizm – dve bolezni i odna problema / A.A. Samsonov, E.Yu. Plotnikova, I.N. Nikushkina, E.A. Talitskaya, M.V. Krasnova, O.A. Krasnov [Alcoholic liver disease and alcoholism: two diseases, one problem]. *Meditsinskii sovet*, 2013, no. 10, pp. 38–41 (in Russian).
3. Al'bitskii V.Yu., Ivanova A.E., Il'in A.G. Smertnost' podrostkov v Rossiiskoi Federatsii [Teenagers mortality on the Russian Federation]. Moscow, 2010, 61 p. (in Russian).
4. Perezhogin A.N., Luzhnov M.V., Zhdanova-Zaplesvichko I.G., Dubrovina O.A., Tarbeeva E.A., Kuz'mina M.V., Shpakova N.L. Analiz dinamiki zabolevaemosti khronicheskim alkogolizmom, alkogol'nymi psikhozami i narkomaniei v Irkutskoi oblasti: Informatsionno-analiticheskii byulleten' za 2014 god [Analysis of mortality from chronic alcoholism, alcoholic psychosis, and drug addiction in Irkutsk region: Information-analytical bulletin for 2014]. Irkutsk, 2015, 26 p. (in Russian).
5. Perezhogin A.N., Luzhnov M.V., Zhdanova-Zaplesvichko I.G., Zaikova Z.A., Bas'ko E.V., Tarbeeva E.A. Analiz dinamiki zabolevaemosti khronicheskim alkogolizmom, alkogol'nymi psikhozami i narkomaniei v Irkutskoi oblasti v 2013 g. [Analysis of mortality from chronic alcoholism, alcoholic psychosis, and drug addiction in Irkutsk region in 2014]. Irkutsk, 2014, 48 p. (in Russian).
6. Andreev E.M. Vozmozhnye prichiny kolebanii prodolzhitel'nosti zhizni v Rossii v 90-eg. [Possible reasons for fluctuations in life interval in Russia in 90-ies last century]. *Voprosy statistiki*, 2002, no. 11, pp. 3–15 (in Russian).
7. Bezrukikh M.M., Dubrovinskaya N.V., Farber D.A. Psikhofiziologiya rebenka [A child psychophysiology]. Moscow, MPSI, Publ., 2008, 495 p. (in Russian).
8. Belikova M.Sh., Zakharova M.A., Sartakov P.G. Otsenka riska, svyazannogo s vozdeistviem tabakokureniya i alkogolya, dlya zdorov'ya kursantov voennogo instituta i metodika profilaktiki [Assessment of risk associated with exposure to tobacco and alcohol on health of the cadets of military institute and its prevention methodology]. *Analiz riska zdorov'yu*, 2015, no. 2, pp. 24–30. DOI: 10.21668/health.risk/2015.2.03.eng.

9. Buzinov R.V., Unguryanu T.N. Otsenka riska, svyazannogo s povedencheskimi faktorami obraza zhizni [An assessment of the risk associated with behavioral lifestyle factors]. *Analiz riska zdorov'yu*, 2013, no. 2, pp. 45–48. DOI: 10.21668/health.risk/2013.2.05.eng.

10. Bushkova A.Yu. Sotsial'no-politicheskie prichiny i posledstviya alkogolizma v Rossii [Social and political reasons and consequences of alcoholism in Russia]. *Molodezhnyi nauchno-tehnicheskii vestnik*, 2013, no. 4, pp. 44–50 (in Russian).

11. Generalov V.O., Sadykov T.R. Alkogol'naya epilepsiya [Alcoholic epilepsy]. *Zdorov'e – osnova chelovecheskogo potentsiala: problemy i puti ikh resheniya*, 2009, vol. 4, no. 1, pp. 12–13 (in Russian).

12. Gertsen M.A., Kozlov I.D. Svyaz' upotrebleniya alkogolya so smertnost'yu ot serdechno-sosudistyykh zabolevaniy u muzhchin s ishemicheskoi bolezn'yu serdtsa: rezul'taty 25-letnego prospektivnogo nablyudeniya [A correlation between alcohol consumption and mortality caused by cardiovascular diseases in men with ischemic heart disease: results of 25-year prospective observation]. *Kardiovaskulyarnaya terapiya i profilaktika*, 2008, vol. 7, no. 6S1, pp. 88. – S. 88 (in Russian).

13. Golenkov A.V., Andreeva A.P., Bulygina I.E. Chastotno-kolichestvennye pokazateli i motivy potrebleniya alkogol'nykh napitkov studentami-medikami [Quantitative and qualitative measures and motives for alcohol use in medical students]. *Narkologiya*, 2009, vol. 8, no. 10, pp. 25–29 (in Russian).

14. Gordeeva S.S. Sotsiologicheskii analiz funktsii ustanovki na potreblenie alkogolya u podrostkov [Sociological analysis of set function for alcohol consumption by teenagers]. *Diskussiya*, 2016, no. 6 (69), pp. 57–63 (in Russian).

15. Goryacheva N.V. Model' potrebleniya alkogolya v Rossii [A model of alcohol consumption in Russia]. *Sotsiologicheskii zhurnal*, 2003, no. 4, pp. 101–107 (in Russian).

16. Kershengol'ts B.M., Chernobrovkina T.V., Nebrat V.V., Rabinovich E.V., Khlebnyi E.S., Shein A.A., Kershengol'ts E.B. Deistvievodno-spirtovykhsistemnadissipativnyesostoyaniyacheloveka. Gipoteticheskaya model' biogenosti i narkogenosti spirtsoderzhashchikh produktov [Impacts exerted by water-alcoholic systems on a human dissipative state. A hypothetical mode; of biogenicity and narcogenic potential of alcohol-containing substances]. *Narkologiya*, 2004, no. 8, pp. 64–76 (in Russian).

17. Efremov A.Yu., Kazaryan L.A. Sotsial'no-psikhologicheskie aspekty prichin podrostkovogo alkogolizma [Social and psychological aspects of reasons for teenagers alcoholism]. *Vospitanie i obuchenie: teoriya, metodika i praktika: sbornik materialov VI Mezhdunarodnoi nauchno-prakticheskoi konferentsii [Education and teaching: theory, methodology and practice: materials of the VI International theory and practical conference]*. 2016, pp. 57–59 (in Russian).

18. Zhdanova-Zaplesvichko I.G., Zaikova Z.A. Analiz meditsinskikh i sotsial'no-ekonomicheskikh posledstviy potrebleniya alkogolya, tabaka i narkotikov v Irkutskoi oblasti [Analysis of medical and social-economic consequences of alcohol, tobacco, and drugs consumption in Irkutsk region]. *Metodologiya profilakticheskoi meditsiny i formirovaniya zdorovogo obraza zhizni: Sbornik nauchnykh statei [Prevention medicine methodology and healthy life-style formation: Scientific papers collection]*. In: A.E. Agapitov, ed. Irkutsk, RIOGBOUDPOIGMAPO, Publ., 2012, pp. 15–18 (in Russian).

19. Bukin V.N., Terkulov R.I., Kormilina O.M., Shamsutdinov Ya.V., Sosnina V.S. Zabolevaemost' naseleniya Novosibirskoi oblasti narkologicheskimi rasstroistvami v 2010 g.

[The Novosibirsk region population morbidity of narcology diseases in 2010 year]. *Narkologiya*, 2011, vol. 10, no. 7, pp. 57–60 (in Russian).

20. Zaitseva N.V., Lebedeva-Nesevrya N.A. Podkhody k postroeniyu effektivnoi regional'noi sistemy informirovaniya o riskakh zdorov'yu [Methodological approaches to building of regional system of health risks information]. *Zdorov'esem'i - 21 vek*, 2010, no. 4, pp. 8 (in Russian).

21. Zimatkin S.M., Bon' E.I. Fetal'nyi alkogol'nyi sindrom: povedencheskie i nevrologicheskie narusheniya [Fetal alcohol syndrome: behavioral and neurological disorders]. *Zhurnal Grodnenskogo gosudarstvennogo meditsinskogo universiteta*, 2013, vol. 42, no. 2, pp. 14–17 (in Russian).

22. Zloupotreblenie alkogolem v Rossiiskoi Federatsii: sotsial'no-ekonomicheskie posledstviya i mery protivodeistviya: Doklad Soveta Obshchestvennoi palaty RF ot 13 maya 2009 g. [Alcohol abuse in the Russian Federation: social-economic consequences and resistance to it: A report made by the RF Civic Chamber Council on May 13, 2009]. Moscow, 2009, 84 p. (in Russian).

23. Andreev E.M., Kir'yanov N.A., Leon D., Makki M., Tomkins S., Shkol'nikov V.M. Zloupotreblenie alkogolem i prezhdevremennaya smertnost' v Rossii na primere Izhevskaya [Hazardous alcohol drinking and premature mortality in Russia: a population based case-control study]. *Narkologiya*, 2008, vol. 7, no. 7, pp. 38–52 (in Russian).

24. Zloupotreblenie psikhoaktivnymi veshchestvami [Management of substance abuse]. World Health Organization. Available at: http://www.who.int/substance_abuse/facts/alcohol/ru/ (26.02.2017) (in Russian).

25. Kirpichenko A.A. Alkogol'naya zavisimost' u zhenshchin s razlichnymi formami sotsial'nogo funktsionirovaniya: avtoref. dis. ... d-ra med.nauk [Alcohol addiction in females with various social functions: abstracts of the thesis. ... for Doctor of Medical Sciences]. Moscow, 2008, 34 p. Available at: <http://www.dissercat.com/content/alkogolnaya-zavisimost-u-zhenshchin-s-razlichnymi-formami-sotsialnogo-funktsionirovaniya> (21.04.2016) (in Russian).

26. Klyaritskaya I.L., Is'kova I.A. Rol' alkogolya v vozniknovenii raka zheludochno-kishechnogo trakta [Role of alcohol in occurrence of a cancer of a gastrointestinal tract]. *Krymskii terapevticheskii zhurnal*, 2007, vol. 2, no. 2 (9), pp. 18–23 (in Russian).

27. Korneshov A.A. Sovremennyy obraz zhizni naseleniya, kak faktor razrusheniya demograficheskogo potentsiala Rossii: avtoref. dis. ... d-ra ekonomich. nauk [Contemporary population lifestyle as a factor causing destruction of the RF demographic potential: abstracts of the thesis. ... for Doctor of Economics]. Moscow, 2010, 45 p. (in Russian).

28. Leone M., Ivashinko A. Epilepticheskie pripadki i alkogol' [Epileptic seizures and alcohol]. *Nevrologiya i neirokhirurgiya Vostochnaya Evropa*, 2012, no. 1, pp. 109–132 (in Russian).

29. Malakhova Zh.L. Kliniko-patogeneticheskie osnovy fetal'nogo alkogol'nogo sindroma u detei rannego vozrasta: avtoref. dis. ... d-ra med nauk [Clinical and pathogenetical grounds for fetal alcohol syndrome in infants: abstracts of the thesis. ... for Doctor of Medical Sciences]. Ekaterinburg, 2012, 47 p. (in Russian).

30. Malakhova Zh.L., Shilko V.I., Shukshina L.A. Fetal'nyi alkogol'nyi spektr narushenii sredi vospitannikov sotsial'nykh uchrezhdenii [Fetal alcohol disorders among the inmates of social institutions]. *Kazanskii meditsinskii zhurnal*, 2009, no. 5, pp. 647–650 (in Russian).

31. Malofeevskaya N.A. Zlokachestvennyye obrazovaniya: vliyanie upotrebleniya alkogolya i ego posledstviya [Cancer: the impact of alcohol consumption and its consequences]. *Upravlenie megapolisom*, 2015, vol. 2, no. 6 (48), pp. 97–103 (in Russian).

32. Markina M.V. Nevrologicheskie rasstroistva pri khronicheskom alkogolizme [Neurological disorders associated with chronic alcoholism]. *Tsentral'nyi nauchnyi vestnik*, 2016, vol. 1, no. 13, pp. 24–26 (in Russian).

33. Koshkina E.A., Pavlovskaya N.I., Yagudina R.I., Kulikov A.Yu., Usenko K.Yu. Mediko-sotsial'nye i ekonomicheskie posledstviya zloupotrebleniya alkogolem v Rossiiskoi Federatsii [Health and social and also economic consequences of alcohol abuse in the Russian Federation]. *Sotsial'nye aspekty zdorov'ya naseleniya: elektronnyi nauchnyi zhurnal*, 2010, no. 2 (14). Available at: <http://vestnik.mednet.ru/content/view/189/30/lang.ru/> (11.04.2014) (in Russian).

34. Merinov A.V., Shustov D.I. Autoagressiya v sem'yakh bol'nykh alkogolizmom [Autoaggression in alcoholics' families]. *Narkologiya*, 2010, vol. 9, no. 9, pp. 26–30 (in Russian).

35. Malinova L.I., Furman N.V., Klochkov V.A., Dolotovskaya P.V., Podbolotov R.A. Model' potrebleniya alkogolya i obshchii serdechno-sosudisty risk u lits trudosposobnogo vozrasta [Alcohol drinking pattern and total cardiovascular risk in able-bodied people]. *Profilakticheskaya meditsina*, 2015, vol. 18, no. 3, pp. 24–30 (in Russian).

36. Nemtsov A.V. Alkogolizm v Rossii: istoriyavoprosa, sovremennyye tendentsii [Alcoholism in Russia: history and contemporary trends]. *Zhurnal nevrologii i psikhiiatrii im. C.C. Korsakova*, 2007, vol. 107, no. S1, pp. 3–7 (in Russian).

37. Nemtsov A.V., Terekhin A.T. Cvyazannaya s alkogolem serdechno-sosudistaya smertnost' v Rossii [Alcohol-associated cardiovascular mortality in Russia]. *Profilakticheskaya meditsina*, 2008, vol. 11, no. 2, pp. 23–31 (in Russian).

38. Nemtsov A.V., Shelygin K.V. Zavisimyye ot alkogolya yavleniya. Situatsiya v severo-zapadnom federal'nom okruge [Alcohol related issues. Situation in the North-Western Federal District]. *Narkologiya*, 2009, vol. 8, no. 12, pp. 44–52 (in Russian).

39. Novikova G.A. Psikhofiziologicheskie osobennosti podrostkov v zavisimosti ot intensivnosti pivnoi alkogolizatsii: avtoref. dis. ... kand. biol. Nauk [Psychophysiological peculiarities of teenagers depending on beer alcoholization intensity: abstracts of the thesis. ... for Candidate of Biological Sciences]. Arkhangel'sk, 2009, 18 p. (in Russian).

40. Novoselova E.N. Osnovnyye faktory prodolzhitel'nosti zhizni zhitelei megapolisa (na primere Moskvyy) [Main factors of megalopolis citizens' life expectancy (example of Moscow)]. *Vestnik Moskovskogo universiteta. Seriya 18: Sotsiologiya i politologiya*, 2016, vol. 22, no. 2, pp. 176–200 (in Russian).

41. Osmanov E.M., Pyshkina A.S. Vliyanie alkogolya na reproduktivnoe zdorov'ye zhenshchin [Influence exerted by alcohol on female reproductive health]. *Vestnik Tambovskogo universiteta. Seriya: Estestvennyye i tekhnicheskie nauki*, 2010, vol. 15, no. 1, pp. 59–62 (in Russian).

42. Indutnyi A.V., Novikov D.G., Khodosevich A.A., Gorbunova L.V., Borzenok G.A., Trofimovich N.A. Otsenka kardiovaskulyarnogo riska pri razlichnom urovne potrebleniya alkogolya [Cardiovascular risk assessment in patients with different level of alcohol consumption]. *Sovremennyye problemy nauki i obrazovaniya*, 2016, no. 2, pp. 146 (in Russian).

43. Pal'chik A.B., Fedorova L.A., Legon'kova C.B. Fetal'nyi alkogol'nyi sindrom: metodicheskie rekomendatsii [Fetal alcohol syndrome: methodical guidelines]. St. Petersburg, 2006, pp. 1–24 (in Russian).

44. Pal'chik A.B., Shabalov N.P. Toksicheskie entsefalopatii novorozhdennykh [Toxic encephalopathy in newborns]. Moscow, MEDpressinform, Publ., 2009, pp. 12–56 (in Russian).

45. Pastukhova M.V. Problema razvitiya i vospitaniya rebenka v sem'e pri alkogolizme ottsa [An issue of developing and educating a child in a family with an alcohol-dependent father]. *Prikladnaya psikhologiya i psikhoanaliz*, 2010, no. 2, pp. 4 (in Russian).

46. Ponomareva M.S. Zloupotreblenie alkogolem molodymi lyud'mi kak ugroza natsional'noi bezopasnosti Rossii [Alcohol abuse among young people as a threat to the RF national security]. *Natsional'nye interesy: prioritety i bezopasnost'*, 2013, no. 7, pp. 52–63 (in Russian).

47. Pochitaeva I.P., Golubeva A.P. Sotsial'no-epidemiologicheskaya kharakteristika alkogol'nykh rasstroistv v Kostromskoi oblasti [Social and epidemiological characteristics of alcohol use disorders in the Kostroma region]. *Kazanskii meditsinskii zhurnal*, 2014, vol. 95, no. 3, pp. 426–433 (in Russian).

48. Izergina E.V., Lozovskaya S.A., Kosolapov A.B., Shevtsova S.P. Predotvratimaya smertnost' muzhskogo naseleniya Dal'nevostochnogo Federal'nogo okruga Rossii [Preventable mortality of the male population of the far Eastern Federal District of Russia]. *Fundamental'nye issledovaniya*, 2015, no. 1–9, pp. 1836–1841 (in Russian).

49. Radaev V.V., Kotel'nikova Z.V. Izmenenie struktury potrebleniya alkogolya v kontekste gosudarstvennoi alkogol'noi politiki v Rossii [Changes in alcohol consumption structure within the context of the state alcohol politics in the RF]. *Ekonomicheskaya politika*, 2016, vol. 11, no. 5, pp. 92–117 (in Russian).

50. Razvodovskii Yu.E. Alkogol' kak faktor riska serdechno-sosudistoi smertnosti [Alcohol as a risk factor of cardiovascular mortality]. *Narkologiya*, 2013, vol. 12, no. 2 (134), pp. 38–42 (in Russian).

51. Reshetnikov O.V., T Openko.G., Kurilovich S.A., Khryanin A.A., Malyutina S.K. Rak pecheni i ego faktory riska v Novosibirsk [Hepatic cancer and its risk factors in Novosibirsk]. *Sibirskii onkologicheskii zhurnal*, 2016, vol. 15, no. 3, pp. 19–27 (in Russian).

52. Ruchkin B.A. Molodezh' i stanovlenie novoi Rossii [Youth and formation of a new Russia]. *Sotsiologicheskie issledovaniya*, 1998, no. 5, pp. 90–98 (in Russian).

53. Sakharov A.V., Govorin N.V. Suitsidal'noe povedenie i potreblenie alkogolya: otsenka vzaimosvyazei na populyatsionnom urovne [Suicidal behavior and alcohol: estimation of correlations at the population level]. *Suitsidologiya*, 2015, vol. 6, no. 2, pp. 35–46 (in Russian).

54. Sakharova E.A. Vozdeistvie alkogolya na plod [Alcohol impacts on a fetus]. *Problemy sovremennoi meditsiny: aktual'nye voprosy: Sbornik nauchnykh trudov po itogam mezhdunarodnoi nauchno-prakticheskoi konferentsii [Vital issues of contemporary medicine: a collection of scientific papers as per results of an international theory and practical conference]*. 2016, pp. 233–236 (in Russian).

55. Sokolovskaya T.A., Azarko V.E., Dmitrieva O.V. Vliyanie alkogolizma roditelei na formirovanie invalidnosti u detei [Influence of parents' alcoholism on formation of physical inability at children]. *Sotsial'nye aspekty zdorov'ya naseleniya*, 2009, vol. 9, no. 1, pp. 9 (in Russian).

56. Romanova N.M., Davidson E.M., Kasterina I.A., Voronov S.E. Sotsial'no-psikhologicheskie faktory zhenskoi prestupnosti [Social and psychological factors of female criminality]. Saratov, Izd-vo Saratovskogo Universiteta, Publ., 2008, 80 p. (in Russian).

57. Leshchenko Ya.A., Boeva A.V., Dorogova V.B., Golubev V.Yu. Sotsial'no-ekologicheskie aspekty zhiznedeyatel'nosti i zdorov'ya naseleniya promyshlennogo goroda Sibiri [Social and economic aspects of population life and health in a Siberian industrial city]. Novosibirsk, 2014, 280 p. (in Russian).

58. Sotsial'no-ekonomicheskoe polozhenie Rossii 2016 [Social and economic situation in Russia in 2016]. *Federal'nayasluzhbagosudarstvennoistatistiki (Rosstat)*. Moscow, 2016, 371 p. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1140086922125 (25.06.2017) (in Russian).

59. Shlyapnikov D.M., Shur P.Z., Ryazanova E.A., Alekseev V.B., Kostarev V.G. Sochetannoe deistvie proizvodstvennykh faktorov i faktorov obraza zhizni na razvitie nekotorykh proizvodstvenno obuslovlennykh zabolevaniy u rabotnikov mashinostroeniya [Combined action of the production factors and lifestyle factors on development of some occupation caused diseases at workers of mechanical engineering]. *Izvestiya Samarskogo nauchnogo tsentra Rossiiskoi akademii nauk*, 2013, vol. 15, no. 3–6, pp. 2021–2023 (in Russian).

60. Soshnikov S.S. Rol' alkogol'nogo faktora v formirovaniy poteri zdorov'ya naseleniya v rezul'tate dorozhno-transportnykh proisshestviy (na primere Moskvyy): avtoref. dis. ... kand. med nauk [A role which the alcohol factor plays in population health losses caused by road accidents (on the example of Moscow): abstracts of the thesis. ... for Candidate of Medical Sciences]. Moscow, 2008, 27 p. (in Russian).

61. Soshnikov S.S., Kaigorodova T.V. Strategiya VOZ po bor'be chrezmernym upotrebleniyem alkogolya i ee ispol'zovanie pri formirovaniy alkogol'noi politiki Rossii [The WHO strategy on fighting alcohol abuse and its application in working out Russian alcohol policy]. *Obshchestvennoe zdorov'e i profilaktika zabolevaniy*, 2006, pp. 42–47 (in Russian).

62. Uvarov I.A. Epidemiologiya, klinika, techenie i lechenie alkogol'nykh psikhozov): avtoref. dis. ... d-ra med nauk [Epidemiology, clinical course and treatment of alcohol psychosis: abstracts of the thesis. ... for Doctor of Medical Sciences]. Moscow, 2009, 38 p. (in Russian).

63. Shilko V.I., Malakhova Zh.L., Bubnov A.A., Bazarnyi V.V., Klein A.V. Fetal'nyi alkogol'nyi sindrom: kliniko-eksperimental'nye sopostavleniya [Fetal alcohol syndrome: clinical and experimental comparison]. *Narkologiya*, 2009, vol. 8, no. 8, pp. 38–40 (in Russian).

64. Khalturina D.A., Korotaev A.V. Russkii krest. Faktory, mekhanizmy i puti preodoleniya demograficheskogo krizisa v Rossii [The Russian cross. Factors, mechanisms and ways to overcome a demographic crisis in Russia]. Moscow, URSS, Publ., 2006, 111 p. (in Russian).

65. Shelygin K.V., Lozhkina L.I. Travmaticheskaya smertnost' i potreblenie alkogolya v Murmanskoi oblasti [Traumatic mortality and alcohol consumption in Murmansk region]. *Sotsial'nye aspekty zdorov'ya naseleniya*, 2016, vol. 47, no. 1, pp. 4 (in Russian).

66. Shuvalova N.V. Mediko-biologicheskie faktory riska zabolevaemosti boleznyami sistemy krovoobrashcheniya v Chuvashii [Medical and biolog risk factors of blood system

diseases in the Chuvash republic]. *Sovremennyye problemy nauki i obrazovaniya*, 2012, no. 4, pp. 70 (in Russian).

67. Bertrand J., Floyd R.L., Weber M.K., O'Connor M., Riley E.P., Johnson K.A., Cohen D.E., National Task Force on FAS/FAE. Fetal Alcohol Syndrome: Guidelines for Referral and Diagnosis. Atlanta, GA: Centers for Disease Control and Prevention, 2004, 62 p.

Lebedeva-Nesevrya N.A., Zhdanova-Zaplesvichko I.G., Rerke V.I., Barg A.O. Alcohol consumption as a factor causing risks for population health (Russian research review). Health Risk Analysis, 2017, no. 4, pp. 147–160. DOI: 10.21668/health.risk/2017.4.15.eng

Received: 25.09.2017

Accepted: 11.12.2017

Published: 30.12.2017