https://doi.org/10.25207/1608-6228-2022-29-1-14-31

CURRENT STATE OF PREVALENCE AND DYNAMICS OF ALCOHOL-ASSOCIATED NARCOPATHOLOGY: A RETROSPECTIVE STUDY

Sergey N. Alekseenko, Stanislav V. Gubarev*, Dmitry A. Lyubchenko, Andrey N. Redko

Kuban State Medical University,
Mitrofana Sedina str., 4, Krasnodar, 350063, Russia

ABSTRACT

Background. The population prevalence of alcohol abuse-associated drug-related diseases bears high social impact. This indicator holds special value both as a potential indirect estimator of the quality of life, availability and efficiency of drug addiction treatment, a well as parameter for qualitative prognostic models of social and economic development. The burden of alcohol-associated drug diseases is typically ambiguous in prevalence estimation, both across Russian Federation and worldwide.

Objectives. A study of the alcohol abuse-associated drug-related morbidity prevalence in Krasnodar Krai for period 2000–2020.

Methods. A retrospective descriptive study included legal-paper data of the "Information on Drug-Related Disorders" federal statistics survey (Form 11) of Krasnodar Krai, years 2000–2020, describing the re-registration rate of alcohol use-associated drug disorders. The inclusion criterion was an established drug-related disease among all age cohorts. The main study indicators were regional prevalence values of alcoholic psychosis, alcohol dependence syndrome and harmful alcohol use relative to gender, area and age.

Results. Prevalence trends in alcohol use-related drug pathology were more favourable in Krasnodar Krai over Southern Federal District and country-wide. The decline rate among males was significantly higher (22.1-fold) vs. the female population (3.0-fold). The prevalence of alcohol use-related drug pathology remained higher in urban vs. rural areas, with higher rural vs. urban decline rates. Over the entire study period, the 40–59 years-age population was leading by the incidence of overall alcohol use-related drug pathology and, separately, of alcoholic psychosis and alcohol dependence syndrome. Highest harmful alcohol use values were registered for 20–39-year population.

Conclusion. The revealed dynamics of legal-registered alcoholic drug pathology prevalence has a multifactorial origin. The changes are conditioned by improvement in the narcological aid institutional regulation within the state guarantee programme, federal and regional preventive measures, current progress in drug therapy, regional demography, as well as underreporting of alcohol-associated drug diseases due to a missing strict vertical statistic registration at the level of any-type medical institutions.

Keywords: prevalence, alcohol-associated drug pathology, alcoholic psychosis, alcohol dependence syndrome, harmful alcohol use, Krasnodar Krai

Conflict of interest: the authors declare no conflict of interest.

For citation: Alekseenko S.N., Gubarev S.V., Lyubchenko D.A., Redko A.N. Current state of prevalence and dynamics of alcohol-associated narcopathology: a retrospective study.

Kubanskii Nauchnyi Meditsinskii Vestnik. 2022; 29(1): 14–31. https://doi.org/10.25207/1608-6228-2022-29-1-14-31

Received 23.11.2021
Revised 10.12.2021
Published 25.02.2022

СОВРЕМЕННОЕ СОСТОЯНИЕ И ДИНАМИКА РАСПРОСТРАНЕННОСТИ АЛКОГОЛЬ-АССОЦИИРОВАННОЙ НАРКОПАТОЛОГИИ: РЕТРОСПЕКТИВНОЕ ИССЛЕДОВАНИЕ

С. Н. Алексеенко, С. В. Губарев*, Д. А. Любченко, А. Н. Редько

Федеральное государственное бюджетное образовательное учреждение высшего образования «Кубанский государственный медицинский университет» Министерства здравоохранения Российской Федерации, ул. им. Митрофана Седина, д. 4, г. Краснодар, 350063, Россия

АННОТАЦИЯ

Введение. Распространенность наркологических заболеваний, вызванных злоупотреблением алкоголем, в популяции имеет высокий уровень социальной значимости. Особая роль данного показателя связана как с возможностью косвенной оценки уровня и качества жизни населения, доступностью и эффективностью наркологической медицинской помощи, так и с возможностью построения качественных прогностических моделей развития социальной и экономической жизни общества. Бремя алкоголь-ассоциированной наркопатологии характеризуется неоднозначностью оценок его распространенности как в масштабах Российской Федерации (РФ), так и на международном уровне.

Цель исследования — определить особенности динамики показателей распространенности наркологической заболеваемости, обусловленной злоупотреблением алкоголем, населения Краснодарского края за 2000–2020 гг.

Методы. В ретроспективное описательное исследование были включены данные официальных форм федерального статистического наблюдения «Сведения о заболеваниях наркологическими расстройствами» (форма № 11) по Краснодарскому краю за 2000–2020 гг., характеризующие частоту повторной регистрации наркологических заболеваний, обусловленных употреблением алкоголя. Критерием включения являлся факт установленного наркологического расстройства среди населения всех возрастных групп. Основными показателями настоящего исследования являлись региональные значения распространенности алкогольных психозов, синдрома зависимости от алкоголя и его пагубного употребления в зависимости от гендерных, территориальных и возрастных признаков.

Результаты. Тренды распространенности наркологической патологии, вызванной алкоголем, в Краснодарском крае носили более благоприятный характер, чем в Южном федеральном округе (ЮФО) и по РФ. Темпы снижения среди мужского населения (22,1 раза) были значительно выше по сравнению с женским (3,0 раза). Сохранилось преобладание показателей распространенности наркологической алкоголь-ассоциированной патологии в городах над сельскими территориями. При этом темпы убыли были выше в сельской местности по сравнению с городами. На протяжении всего изучаемого периода лидирующей группой по частоте общей заболеваемости наркологической патологией, вызванной алкоголем, а также отдельно в отношении алкогольных психозов и синдрома зависимости от алкоголя являлись лица 40–59 лет. Для

населения 20–39 лет были характерны самые высокие значения пагубного употребления алкоголя.

Заключение. Выявленные закономерности динамики официальной регистрации распространенности алкогольной наркологической патологии есть результат мультифакторного влияния. Изменения были обусловлены как совершенствованием организационных механизмов оказания наркологической помощи в рамках программы государственных гарантий, результатами федеральных и краевых профилактических программ, достижениями современной фармакотерапии, региональными демографическими особенностями, так и являлись следствием недоучета наркологических алкоголь-ассоциированных заболеваний по причине отсутствия строгой вертикальной системы статистической регистрации на уровне медицинских организаций всех форм собственности.

Ключевые слова: распространенность, алкоголь-ассоциированная наркологическая патология, алкогольный психоз, синдром зависимости от алкоголя, употребление алкоголя с вредными последствиями, Краснодарский край

Конфликт интересов: авторы заявляют об отсутствии конфликта интересов.

Для цитирования: Алексеенко С.Н., Губарев С.В., Любченко Д.А., Редько А.Н. Современное состояние и динамика распространенности алкоголь-ассоциированной наркопатологии: ретроспективное исследование. *Кубанский научный медицинский вестник*. 2022; 29(1): 14–31. https://doi.org/10.25207/1608-6228-2022-29-1-14-31

Поступила: 23.11.2021
Принята после доработки: 10.12.2021
Опубликована: 25.02.2022

Introduction

The strategic challenges of modern society, intensified by an unprecedented epidemiological situation and restrictive measures, together with the recurrence of economic expansion and contraction, lead to and revitalise targeted institutional tasks [1–9]. One of the recommendations by the healthcare system for improving national security is[1] the preservation of health among the population and the increase in life expectancy[2] [1, 2, 10, 11]. This, among other measures, requires the implementation of the best healthcare practices for the improvement of public health in all regions[3].

Therefore, it is important to conduct applied scientific researches on hidden reserves and leverage points for improving healthy life expectancy and decreasing the incidence rates for socially significant and other diseases as well as for decreasing premature mortality rates among the economically and socially active population. It is also important to study the equitability of material assets and accessibility of primary and secondary healthcare and to assess their importance in completing specified tasks [12–20]. One of the key issues in health protection on a national scale is the decrease in alcohol dependence among population. The prevalence of alcohol-use disorders is one of the most critical indicators of the need for preventive medical and interdepartmental activities as well as of follow-up care in the treatment of such disorders [12, 13, 17–25].

The purpose of the study was to define prevalence dynamics in alcohol-use disorders among the Krasnodar Krai population from 2000 to 2020.

METHODS

Study design

A retrospective analytical descriptive study was conducted.

[1] RF Presidential Decree dd. July 2, 2021 No. 400 'On Russian Federation national security strategy'.
[2] RF Presidential Decree dd. June 6, 2019 No. 254 'On healthcare development strategy in the Russian Federation for the period up to 2025'.
[3] European Regional Bureau of the World Health Organization Making the European Region Safer: developments in alcohol control policies, 2010–2019 — Copenhagen: World Health Organization, 2021 https://www.euro.who.int/ru/health-topics/disease-prevention/alcohol-use/publications/2021/making-the-european-region-safer-developments-in-alcohol-control-policies,-20102019-2021

Acceptance criteria

Inclusion criteria

The key acceptance criteria for patients in the studied group were official cases of mental and behavioural disorders caused by alcohol use: alcohol-induced psychoses (F10.03, F10.7, F10.4–F10.6 and F10.73, 75, 81, 91), alcohol dependence syndromes (F10.2,3, F10.70–72 and 74, 82, 92) and the harmful use of alcohol (F10.1) in accordance with the International Classification of Diseases, 10th Edition.

Analysis on the prevalence rate for specified substance use disorders was based on the data from report form No. 11 'Substance dependence disorder data'[4] from 2000 to 2020.

Exclusion criteria

The lack of an official alcohol-use disorder diagnoses among patients seeking medical attention in psychoneurological healthcare organisations.

Study conditions

The data analysis was carried out at the public health, healthcare and medicine history department; preventive treatment, healthy living and epidemiology department and fundamental and medical biochemistry department of the Federal State-Funded Educational Institution of Higher Education, Kuban State Medical University, the Ministry of Healthcare of the Russian Federation.

Study duration

This study was conducted from 2019 to 2021.

Study target indicators

The target indicators for this study were the prevalence levels of mental and behavioural disorders caused by alcohol use among the Krasnodar Krai population from 2000 to 2020. These disorders included alcohol-induced psychoses (F10.03, F10.7, F10.4–F10.6 and F10.73, 75, 81, 91), alcohol dependence syndromes (F10.2,3 and F10.70–72, 74, 82, 92) and the harmful use of alcohol (F10.1) based on gender, settlement area (urban or rural) and age groups used in form No. 11 'Substance dependence disorder data'.

Study outcome

Key study outcome

During the study, alcohol-use disorders (hereinafter, 'AUD'), alcohol-induced psychoses (hereinafter, 'AIP'), alcohol dependence syndromes (hereinafter, 'ADS') and the harmful use of alcohol (hereinafter, 'HUoA') were analysed. Acquired values were compared to the general substance use prevalence rate (hereinafter, 'SUPR gen'). The dynamics of gender-, age- and settlement area-based alcohol-use disorder prevalence in Krasnodar Krai from 2000 to 2020 was defined.

Additional study outcome

No additional indicators were assumed for the study.

Target population analysis

The dynamics of key prevalence indicators was evaluated using calculated visibility indicators (%). To compare the indicators for the same period in terms of gender and settlement area, the ratio indicator was used.

The definition of alcohol-use disorder prevalence trends and the analysis of dynamics among separate nosological entities were based on periodic five-year-period samples between the extreme points of study duration, which helped to decrease the amount of information.

Outcome registration methods

The data was tabulated, and line diagrams were prepared.

Statistical analysis

Sample size calculation principle

The study was conducted as a continuous survey for the population analysis of patients diagnosed with mental and behavioural disorders caused by alcohol use, such as alcohol-induced psychoses (F10.03, F10.7, F10.4–F10.6 and F10.73, 75, 81, 91), alcohol dependence syndromes (F10.2, 3 and F10.70–72, 74, 82, 92) and the harmful use of alcohol (F10.1) in accordance with the International Classification of Diseases, 10th Edition.

[4] Order of the Russian Federal State Statistics Service (Rosstat) dd. October 16, 2013 No. 410 'On the approval of statistical tools for organizing federal statistical survey on substance dependence disorders among population conducted by the Ministry of Healthcare of the Russian Federation'.

Statistical data analysis methods

Initial prevalence intensive (hereinafter, 'II') and extensive (hereinafter, 'EI') indicators as well as visibility (hereinafter, 'VI') and ratio (hereinafter, 'RI') indicators were calculated and statistical value difference certainty value was calculated using Student's t-test. Initial data acquisition, processing and visualisation were carried out using Microsoft Office Excel.

RESULTS

Characteristics of the studied group

During the continuous survey, the prevalence of psychoactive substance use-related mental and behavioural disorders, alcohol-use-related pathological states, including alcohol-induced psychoses (F10.03, F10.7, F10.4–F10.6 and F10.73, 75, 81, 91), alcohol dependence syndromes (F10.2, 3 and F10.70–72, 74, 82, 92) and the harmful use of alcohol (F10.1), among the Krasnodar Krai population from 2000 to 2020 was analysed.

Key findings

In general, during 2000 to 2020, the absolute number of people diagnosed with alcohol-use disorders registered at the end of every year among the Krasnodar Krai population decreased by 4.8 times (from 100,033 to 21,022 people), whereas the Krasnodar Krai population increased by 676,804 people (13.5%). The gender-based distribution of patients with specified diagnoses was defined by the prevailing decrease in men over women by 7.5 times in 2000 and by 3.7 times in 2020. During the studied period, the AUD prevalence rate decreased by 5.4 times ($p < 0.01$) (Fig. 1).

The registration rate for all psychoactive substance dependence disorders among the Krasnodar Krai population decreased by 5.1 times (from 362.4 to 40.7 per 100,000 people) ($p < 0.01$). At the same time, the prevalence of psychoactive substance use disorders (excluding alcohol-use disorders) decreased by 4.0 times (from 2578.5% to 506.0%) ($p < 0.01$). The proportion of patients with alcohol-use disorders from among patients diagnosed with any psychoactive substance use disorder was 77.6% in 2000 and decreased by 73.2% ($p < 0.01$) in 2020.

The comparison of statistical series for alcohol-use disorder prevalence showed a similarity of trends for the studied period (Fig. 2). At the same time, the frequency of recurrent cases and chronic types of the disorders had a smoother dynamics and a less significant total decrease. Thus, from 2000 to 2008, the prevalence of alcohol-use disorders among the Krasnodar Krai population was

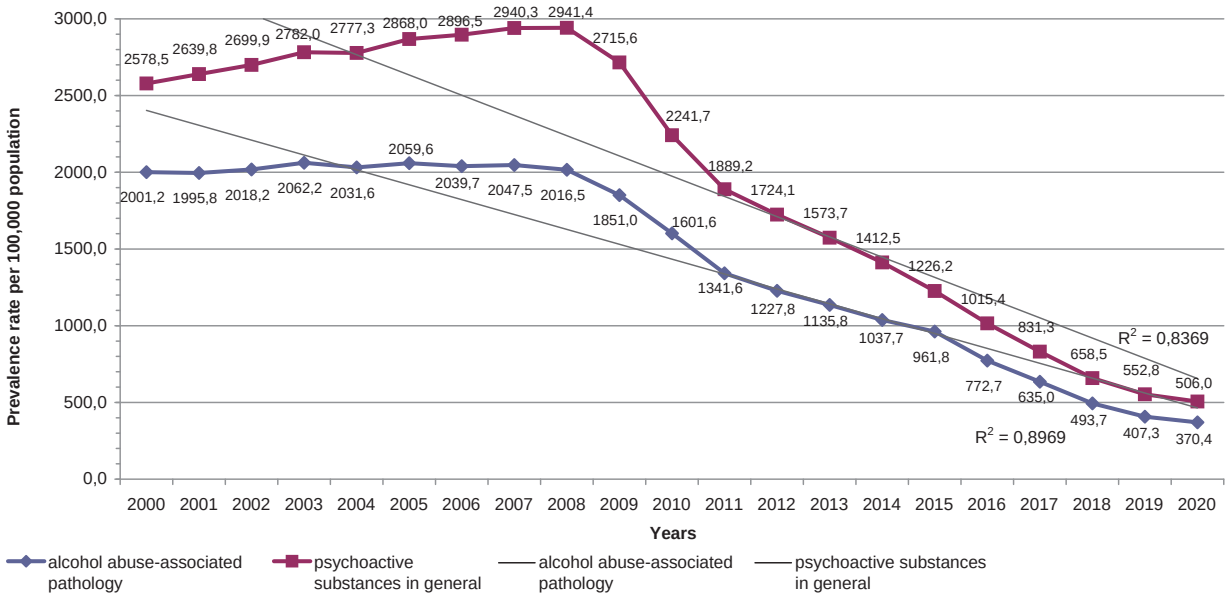

Fig. 1. Prevalence dynamics of drug disorders in overall psychoactive-substance and alcohol abuse. Krasnodar Krai, 2000–2020, per 100,000 population.
Рис. 1. Динамика распространенности наркологических расстройств, связанных с употреблением психоактивных веществ, в целом и заболеваний, обусловленных злоупотреблением алкоголем. Краснодарский край. 2000–2020 гг. На 100 000 населения.

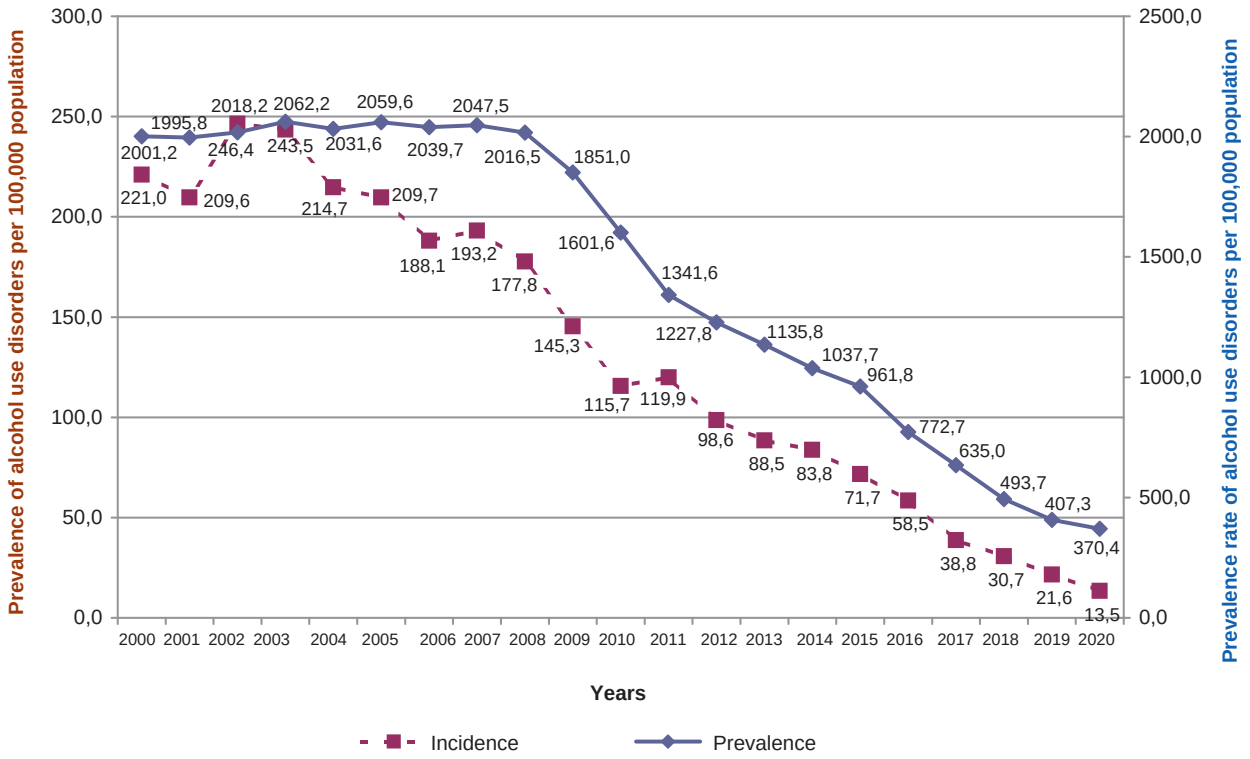

Fig. 2. Comparative morbidity and prevalence dynamics of alcohol-related drug disorders. Krasnodar Krai, 2000–2020, per 100,000 population.
Рис. 2. Сравнение динамики заболеваемости и распространенности наркологических заболеваний, обусловленных злоупотреблением алкоголем. Краснодарский край. 2000–2020 гг. На 100 000 населения.

defined by insignificant variations within 3.1% ($p > 0.05$). For the rest of the period, it was defined by a consistent decrease. This provided for the above-mentioned statistical decrease from 2001.2% to 370.4% ($r < 0.01$).

The changes in the frequency of alcohol-use disorders revealed for the first time were different in nature. The 11.5% increase from 2000 to 2002, which was replaced with a consistent decrease from 2003 onwards, allowed us to notice the general decrease by 16.4 times from the initial level of 221.0% ($r < 0.01$) and by 18.3 times ($r < 0.01$) from the maximum level at the end of the studied period. It should also be noted that the dynamics of AUD incidence and prevalence bear time-based similarities to the changes in the rates of mortality caused by the above-mentioned causes [14].

The subject of consideration was structural nosological analysis and the identification of alcohol-use disorder prevalence specifics.

During the studied period, the frequency of medical resource utilisation caused by alcohol-induced psychoses, alcohol dependence syndromes and the harmful use of alcohol decreased significantly (Table 1).

The registered prevalence indicator for alcohol-induced psychoses among the Krasnodar Krai population in 2019 was 2.3%, which was 17.1 times lower than that in 2000 ($p < 0.01$). The same indicator for the Southern Federal District from 2005 to 2019 showed a 3.1 times decrease to 17.9% ($p < 0.01$). At a federal level, AIP prevalence initially had a higher value and similar dynamics. However, the change rate was less significant than that at other levels (2.4 times decrease; $p < 0.01$).

The prevalence of alcohol dependence syndrome was the highest across all levels. During the twenty years studied, this indicator decreased from 1551.0% to 319.6% (4.9 times; $p < 0.01$). The statistics for the Southern Federal District showed a 1.8 times decrease ($p < 0.01$). At the federal level, alcohol dependence prevalence was 1543.2% in 2000; this value was not significantly different from the prevalence among the Krasnodar Krai population. From 2000 to 2019, the prevalence among

Table 1. Legal prevalence dynamics of alcohol-related drug disorders. Per 100,000 population, Krasnodar Krai, Southern Federal District and Russian Federation total, both genders, 2000–2019
Таблица 1. Динамика зарегистрированной распространенности наркологической алкоголь-ассоциированной патологии. На 100 000 населения. Краснодарский край, Южный федеральный округ и Российская Федерация в целом. Оба пола. 2000–2019 гг.

Years	Alcohol-induced psychoses			Alcohol dependence syndrome			Harmful use of alcohol		
	Krasnodar Krai	Southern Federal District[1]	RF	Krasnodar Krai	Southern Federal District[1]	RF	Krasnodar Krai	Southern Federal District[1]	RF
2000	39.3	—	75.1	1551.0	—	1543.2	411.0	—	378.2
2005	47.4	55.0	93.8	1590.6	1249.7	1560.5	421.6	407.5	387.9
2010	30.6	40.2	70.9	1338.5	1363.9	1407.2	232.6	305.9	335.1
2015	7.7	20.0	45.5	718.6	963.2	1128.7	235.6	227.7	246.7
2019	2.3	17.9	30.8	319.6	693.4	842.5	85.4	134.4	136.3

Note: [1] Southern Federal District was instated on 13 May 2000, legal data unavailable for this year.
Примечание: [1] Южный федеральный округ был образован 13 мая 2000 г., данных за указанный год в доступных официальных источниках не найдено.

the Russian Federation decreased by 1.8 times ($p < 0.01$).

At a regional level, the prevalence of the harmful use of alcohol for the specified period decreased from 411.0% to 85.4% (4.8 times; $p < 0.01$). For the Southern Federal District, it decreased by 3.0 times ($p < 0.01$). The comparative analysis for different levels showed that the initial values for the Krasnodar Krai, Southern Federal District and Russian Federation were similar. However, due to lower decrease rates across the Russian Federation, the indicator decreased by 2.8 times ($p < 0.01$).

The gender-based dynamics of alcohol-use disorder prevalence in Krasnodar Krai from 2000 to 2020 showed that such disorders were found more commonly among men (Fig. 2).

For Krasnodar Krai men, the initial value of AUD prevalence was 3787.5% in 2000. During the studied years, it decreased to 171.4% (22.1 times; $p < 0.01$). For Krasnodar Krai women, the value of AUD prevalence increased to 592.1% (1.3 times; $p < 0.01$) from 2000 to 2008. In general, from 2000 to 2020, it decreased by 3.0 times from the initial value of 440.5% to 146.5% ($p < 0.01$). As a result, a more significant decrease among men provided for the change of the gender-based ratio from 1:8.6 (2000) to 1:4.3 (2020) for women and men accordingly.

The gender-based alcohol-use disorder prevalence was defined by a decrease for all registered nosological entities (Table 2). Among men, the decrease of AIP prevalence for the studied period was 96.5%; it decreased from 73.6 to 2.6 cases per 100,000 people of the corresponding gender ($p < 0.01$). Among women, this indicator was 0.6% in 2020 versus 9.3% in 2000, which was equivalent to a decrease of 93.5% ($p < 0.01$). The gender-based ratio for AIP-patients from 2000 to 2020 changed from 1:7.9 to 1:4.3 (women and men accordingly).

The ADS prevalence among men for the studied period decreased from 2902.3% to 491.2% (83.1%; $p<0.01$). Among women, the dynamics was less significant; the prevalence decreased from 370.4% to 124.6% (66.4%; $p<0.01$). Thus, among Krasnodar Krai in 2000, for 1 woman diagnosed with alcohol dependence syndrome, there were 7.8 men with the same diagnosis; however, in 2020 the ratio changed to 1:3.9 accordingly.

The analysis of gender-based HUoA prevalence shows that in the beginning of the studied period, the ratio of men to women was 13.4:1 accordingly. Later, HUoA prevalence among men decreased (despite some fluctuations) and was 135.7% in 2020, which was 6.0 times less than the initial level ($p<0.01$). The dynamics among women was different. The prevalence for the specified nosology increased by 27.0% from the initial level of 60.8% in 2005 but was then replaced with a consistent decrease. The prevalence decreased to 21.3% in 2020, which was 65.0% less than that at the initial level and 83.2% less than the maximum level for the studied period ($p<0.01$). Thus, the ratio between men and women among HUoA-diagnosed patients decreased to 6.4:1 accordingly.

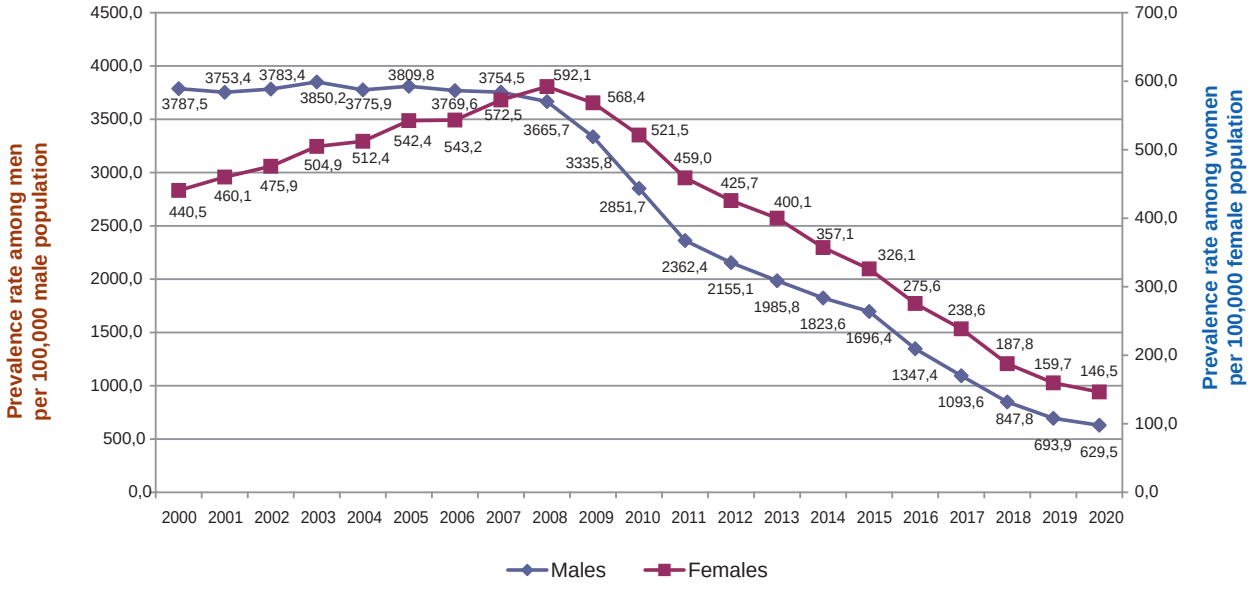

Fig. 3. Legal prevalence dynamics of alcohol-related drug disorders. Krasnodar Krai, 2000–2020, by gender, per 100,000 gender population.
Рис. 3. Динамика зарегистрированной распространенности наркологической алкоголь-ассоциированной патологии. Краснодарский край. 2000–2020 гг. По полу. На 100 000 населения соответствующего пола.

Table 2. Legal gender prevalence dynamics of alcohol-related drug disorders. Per 100,000 population, Krasnodar Krai, 2000–2020
Таблица 2. Динамика зарегистрированной гендерной распространенности наркологической алкоголь-ассоциированной патологии. На 100 000 населения. Краснодарский край. 2000–2020 гг.

Years	Alcohol-induced psychoses				Alcohol dependence syndrome				Harmful use of alcohol			
	M		F		M		F		M		F	
	II	VI	II	VI	II	VI	II	VI	II	VI	II	VI
2000	73.6	100.0	9.3	100.0	2902.3	100.0	370.4	100.0	811.7	100.0	60.8	100.0
2005	87.8	119.3	12.3	132.3	2903.2	100.0	452.9	122.3	818.9	100.9	77.2	127.0
2010	54.6	74.2	9.9	106.5	2365.5	81.5	450.9	121.7	431.6	53.2	60.6	99.7
2015	14.1	19.2	2.1	22.6	1234.0	42.5	272.5	73.6	448.3	55.2	51.5	84.7
2020	2.6	3.5	0.6	6.5	491.2	16.9	124.6	33.6	135.7	16.7	21.3	35.0

The settlement area-based prevalence of alcohol-use disorders (for patients living in urban or rural areas of Krasnodar Krai) showed a difference in dynamics and ratio values depending upon specific nosologies (Table 3).

The prevalence of alcohol-induced psychoses among urban area-based patients was initially 1.8 times higher than that among rural area-based patients ($p < 0.01$). Positive vector of development defined the decrease in AIP prevalence among urban area-based patients in 2020; it decreased to 2.2%, which was 22.5 times less than the initial value ($p < 0.01$). Total decrease among rural area-based patients for the studied period was more significant and was 38.4 times ($p < 0.01$). Thus, the ratio between urban area-based and rural area-based patients, initially or repeatedly diagnosed with AIP, changed to 2.8:1 accordingly.

In 2000, the prevalence rates of alcohol dependence syndrome among urban area-based and rural area-based patients were almost identical: 1568.7% and 1530.9% ($p > 0.05$). Notably, the trend of a decrease in ADS prevalence, shared by both settlement areas, was more significant among rural area-based patients. In 2020, ADS prevalence in urban areas was 348.2%, which was 77.8% less than the initial value ($p<0.01$). In rural areas the prevalence was 228.0%, which was 85.1% less than that in 2000 ($p < 0.01$).

Table 3. Legal prevalence dynamics of alcohol-related drug disorders. Per 100,000 population, Urban and rural areas, both genders, 2000–2020
Таблица 3. Динамика зарегистрированной распространенности наркологической алкоголь-ассоциированной патологии. На 100 000 населения. Городская и сельская местность. Оба пола. 2000–2020 гг.

Years	Alcohol-induced psychoses				Alcohol dependence syndrome				Harmful use of alcohol			
	Urban area		Rural area		Urban area		Rural area		Urban area		Rural area	
	II	VI	II	VI	II	VI	II	VI	II	VI	II	VI
2000	49.4	100.0	27.8	100.0	1568.7	100.0	1530.9	100.0	473.8	100.0	340.1	100.0
2005	52.5	106.3	41.7	150.0	1642.1	104.7	1533.4	100.2	438.8	92.6	402.4	118.3
2010	36.2	73.3	24.4	87.8	1451.4	92.5	1213.6	79.3	204.5	43.2	263.6	77.5
2015	9.1	18.4	5.9	21.2	831.3	53.0	585.9	38.3	290.8	61.4	170.6	50.2
2020	2.2	4.5	0.8	2.9	348.2	22.2	228.0	14.9	87.9	18.6	57.5	16.9

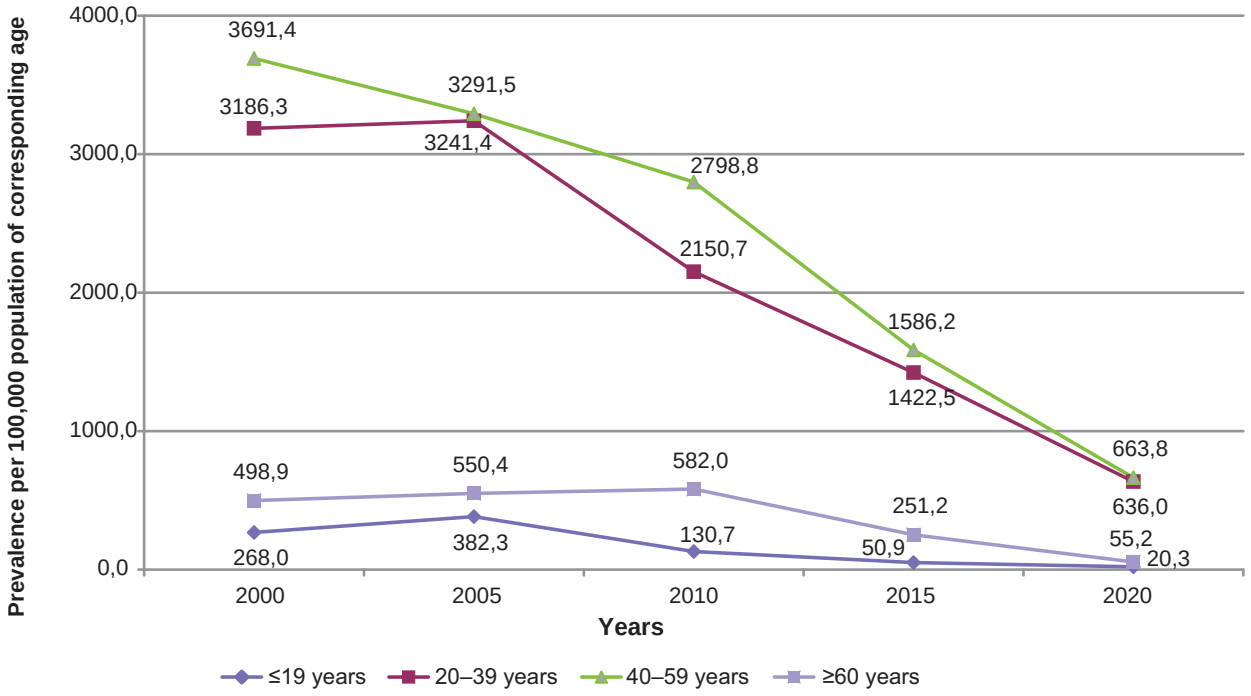

Fig. 4. Legal age prevalence dynamics of alcohol-related drug disorders. Per 100,000 age population, Krasnodar Krai, 2000–2020.
Рис. 4. Динамика зарегистрированной повозрастной распространенности наркологической алкоголь-ассоциированной патологии. На 100 000 населения соответствующих возрастов. Краснодарский край. 2000–2020 гг.

In 2000, the prevalence of the harmful use of alcohol among urban area-based patients in Krasnodar Krai was 1.4:1. However, the decrease rate in rural areas was a little bit higher; in 2020, it decreased by 83.1% ($p < 0.01$). In urban areas, it decreased by 81.4% ($p < 0.01$) from the initial value for each territory.

Age-based analysis of AUD prevalence was conducted among the following age groups: 0–19 years, 20–39 years, 40–59 years and 60 years and above.

From 2000 to 2020, alcohol-use disorders prevailed among patients aged 40–59 years (in general, 2406.3 cases per 100,000 people of the corresponding age for the entire period) (Fig. 4). These disorders were less common among patients aged 20–39 years (in general, 2127.4 cases per 100,000 people of the corresponding age for the entire period). The third highest alcohol-use disorders prevalence during the studied period in Krasnodar Krai was in the 60 years and above age group (387.5 cases per 100,000 people of the corresponding age).

General AUD prevalence among patients aged 40–59 years during the studied period decreased by 5.6 times from 3691.4% to 663.8% ($p < 0.01$).

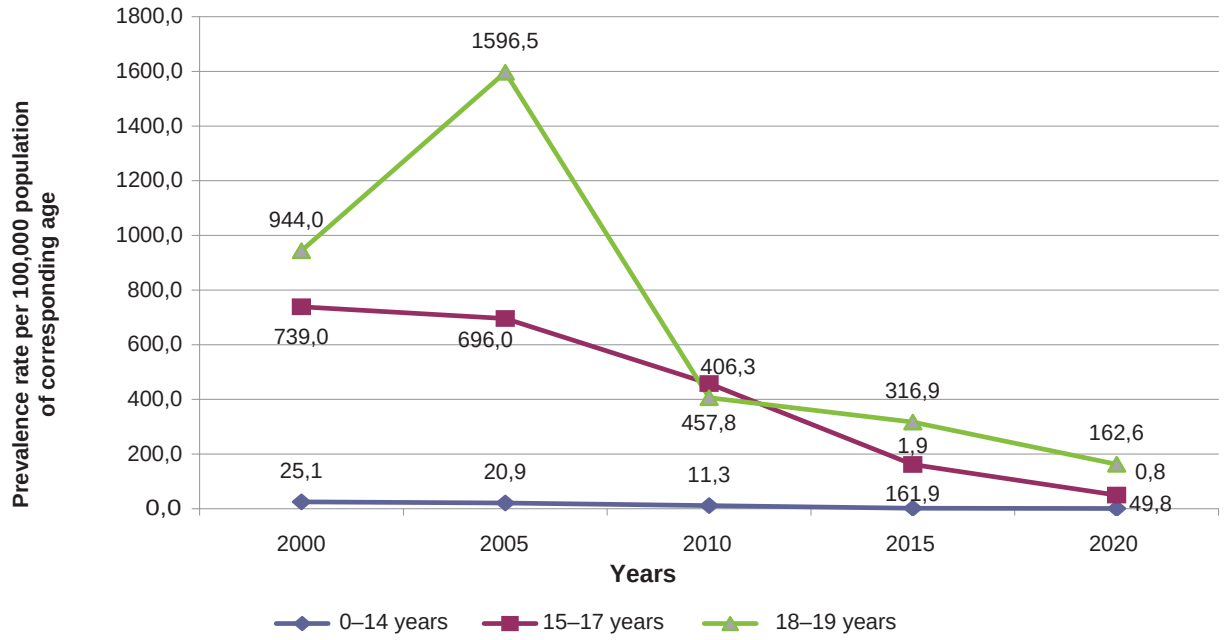

Fig. 5. Legal prevalence dynamics of alcohol-related drug disorders in 0–19-year population. Per 100,000 age population, Krasnodar Krai, 2000–2020.
Рис. 5. Динамика зарегистрированной распространенности наркологической алкоголь-ассоциированной патологии среди лиц 0–19 лет. На 100 000 населения соответствующих возрастов. Краснодарский край. 2000–2020 гг.

Among patients aged 20–39 years, the prevalence decreased less significantly from 3186.3% to 636.0% (5.0 times; $p < 0.01$). Among patients aged 60 years and above, the prevalence of alcohol-use disorders decreased from 498.9% in 2000 to 55.2% in 2020 (9.0 times; $p < 0.01$). However, the prevalence for the studied period reached the highest level of 582.0% in 2010, which was 14.3% higher than the initial value and 90.5% higher than the final value ($p < 0.01$). Among patients aged 0–19 years, the prevalence of alcohol-use disorders was different in nature. It reached the maximum level of 382.3 per 100,000 people of the corresponding age in 2005, which was 1.4 times higher than the initial value and 18.8 times higher than the final value ($p < 0.01$).

Intra-group specifics of AUD prevalence among patients aged 0–19 years is of immense practice-oriented use in healthcare.

Among groups of patients belonging to this age group, the highest prevalence of alcohol-use disorders was found among patients aged 18–19 years (Fig. 5).

This group was defined by the highest AUD prevalence rates among all age groups at the beginning of the studied period (944.0 per 100,000 patients of the corresponding age) as well as by the maximum value among all age groups (1596.5% in 2005). In general, the dynamics of prevalence for the specified diseases among patients aged 18–19 years during from 2000 to 2020 was decreasing in nature (5.8 times decrease; $p < 0.01$).

During the studied period, the prevalence of alcohol-use disorders among patients aged 15 to 17 years decreased from 739.0% to 49.8% (14.8 times; $p < 0.01$).

Among patients aged 0–14 years (the biggest group), the dynamics was consistently positive. Thus, the alcohol-use disorder prevalence decreased by 31.3 times from 25.1% to 0.8% ($p < 0.01$).

The age-based nosological dynamic analysis helped to specify prevalent diseases among the above-mentioned mature people (Table 4).

Despite the decrease from 80.3% to 3.1% (26.0 times; $p < 0.01$), the AIP prevalence among people aged 40–59 years was the highest (in comparison with other age groups). The second-highest AIP prevalence was found among people aged 20–39 years; it decreased from 59.6% to 1.9% ($p < 0.01$).

Table 4. Legal age morbidity dynamics of alcohol-related drug disorders. Per 100,000 age population, Krasnodar Krai, 2000–2020
Таблица 4. Динамика зарегистрированной повозрастной болезненности наркологической алкоголь-ассоциированной патологией. На 100 000 населения соответствующих возрастов. Краснодарский край. 2000–2020 гг.

Diagnosis	Alcohol-induced psychoses				Alcohol dependence syndrome				Harmful use of alcohol			
	Age											
Years	≤19	20–39	40–59	≥60	≤19	20–39	40–59	≥60	≤19	20–39	40–59	≥60
2000	0.2	59.6	80.3	10.4	38.9	2270.3	3166.1	488.5	228.9	856.5	445.0	0.0
2005	0.7	67.3	89.2	13.8	105.5	2371.8	2761.1	534.5	276.1	802.3	441.2	2.1
2010	0.1	31.7	62.2	16.0	9.4	1732.0	2441.2	550.4	121.2	387.0	295.4	15.6
2015	0.0	10.1	14.8	2.8	0.7	1028.6	1309.7	241.6	50.3	383.9	261.7	6.8
2020	0.0	1.9	3.1	0.9	3.8	489.4	549.4	50.2	16.5	144.7	111.3	4.1

The situation was the same for ADS prevalence. Among people aged 40–59 years, the ADS prevalence decreased from 3166.1% to 549.4% (5.8 times; $p < 0.01$). Among people aged 20–39 years, the ADS prevalence decreased by 4.6 times from 2270.3 to 489.4 per 100,000 people of the corresponding age ($p < 0.01$).

Unlike the prevalence of the above-mentioned nosologies, the prevalence of the harmful use of alcohol was initially higher among people aged 20–39 years (856.5%) than among people aged 40–59 years (445.0%) ($p < 0.01$). Specified HUoA prevalence was maintained throughout the entire studied period. From 2000 to 2020, the most significant decrease in HUoA prevalence was found in the youngest age group (0–19 years); it decreased from 228.9% to 16.5% (13.9 times; $p < 0.01$).

Additional findings

There were no additional findings.

DISCUSSION

After reviewing unprecedented for the current history of the Russian Federation AUD decrease trends, the inconsistency of value judgements should be noted.

Despite the decrease in official registration for the above-mentioned diagnoses, the clinical and organisational drug intervention issue experts we questioned claimed that there was an underestimation of incidence and prevalence. It is extremely difficult to evaluate the 'statistical spread' in current conditions [17–20, 22–25].

On the one hand, the current situation can be partly attributed to the specifics of 'medical treatment procedure for the "psychiatry–addiction medicine" profile'[5] implementation, including regulations for voluntary patient follow-up medical care provided by an addiction psychiatrist. In this context, we believe that the increasing availability of drug dependence treatment in the non-public sector of the healthcare system is a significant factor for the decreasing number of official AUD cases. As a result of the redistribution of patients' medical aid appealability to private healthcare organisations, the hidden drug-abusing population increases. The majority of such patients is socially and economically active. Such patients are afraid of social stigma and restraint and receive appropriate medical care outside of state substance dependence treatment institutions, which form the official statistics [17, 23, 24].

On the other hand, clinically, there is immense development in the medical treatment of the above-mentioned disorders and in the phased successive rehabilitation model [20, 22].

Of particular note are measures for improving disease-prevention service within the state for decreasing alcohol use and improving prevention of alcohol use in the Russian Federation for the period up to 2020, as well as for regional programmes and measures for preventing addictive disorders [10, 11, 23–25].

Besides, demographical specifics of Krasnodar Krai for the studied period include express migration inflow of working-age, preretirement-age and retire-

[5] The Decree of the Ministry of Healthcare of the Russian Federation dd December 30, 2015 No. 1034n 'On approval of the medical treatment procedure for the 'psychiatry–addiction medicine' profile and the Procedure for follow-up medical care for people with mental and behavioural disorders caused by psychoactive substance use' (amended and revised).

ment-age individuals with well-defined life attitude and values, including self-protective behaviour towards alcohol dependencies.

The difficulty of forming a statistical representation for psychoactive substance use disorder dynamics limits the evaluation of appropriate medication measure efficiency as well as forecasting of changes in terms of national and economical security of the country [18, 20, 22–25].

In this context, it is extremely important to unify the strategy for recording drug addiction disorder incidence and prevalence (including private healthcare). In addition, in-depth epidemiological studies of the situation with substance use in general and with alcohol use in particular, are also extremely important. They can form the basis for developing an alcohol dependence prevention state policy [21, 23, 24].

From 2000 to 2020, the number of official alcohol-use disorder cases in Krasnodar Krai decreased by 5.4 times. Taking the co-directionality of changes in psychoactive substance use and alcohol-use disorder prevalence into consideration, it can be affirmed that changes in the official registration of alcohol-use cases made a substantial contribution to the general addiction disorder prevalence.

The dynamics of alcohol-use disorder prevalence in Krasnodar Krai was more positive in nature than that in the Southern Federal District and in the Russian Federation in general. Settlement area-based dynamics of alcohol-use disorder prevalence expressed in prevailing levels in urban areas against decreasing levels in rural areas. This defines the requirement for the analysis of availability of specialised drug dependence care; the availability can form an independent variable, which contributes to the underestimation.

The decrease in alcohol-use disorders prevailed among men (22.1 times) over women (3.0 times). The least positive trends found among women were in terms of alcohol dependence syndrome and harmful use of alcohol.

The most negative age-based situation for the studied period was found among people aged 40–59 years; this was the case for both alcohol-use disorders in general and alcohol psychoses and alcohol dependence syndromes in particular. In comparison to other age groups, the harmful use of alcohol was prevailing among people aged 20–39 years.

CONCLUSION

The current trends of alcohol-use disorder prevalence are the result of complex and multifactorial processes. The changes are driven by the development of institutional arrangements for drug dependence treatment within the government guarantee programme, results of federal and regional prevention programmes, advances in modern medication-assisted treatment and specifics of regional demography. Besides, the changes are defined by the underestimation of alcohol-use disorder cases, caused by the lack of strict vertical statistical registration systems in healthcare organisations of all ownership forms.

COMPLIANCE WITH ETHICAL STANDARDS

The study complies with the standards of the Declaration of Helsinki and was approved by the Independent Committee for Ethics of Kuban State Medical University, Ministry of Health of the Russian Federation (Mitrofana Sedina str., 4, Krasnodar, Russia), Minutes No. 84 of 12.12.2019.

СООТВЕТСТВИЕ ПРИНЦИПАМ ЭТИКИ

Проведенное исследование соответствует стандартам Хельсинкской декларации (Declaration Helsinki), одобрено независимым этическим комитетом федерального государственного бюджетного образовательного учреждения высшего образования «Кубанский государственный медицинский университет» Министерства здравоохранения Российской Федерации (ул. им. Митрофана Седина, д. 4, г. Краснодар, Россия), протокол № 84 от 12 декабря 2019 г.

FINANCING SOURCE

The authors declare that no funding was received for this study.

ИСТОЧНИК ФИНАНСИРОВАНИЯ

Авторы заявляют об отсутствии спонсорской поддержки при проведении исследования.

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AUTHOR CONTRIBUTIONS

Alekseenko S.N.

Conceptualisation — concept statement; statement and development of key goals and objectives.

Conducting research — data analysis and interpretation.

Text preparation and editing — drafting of the manuscript, its critical revision with a valuable intellectual investment; contribution to the scientific layout.

Approval of the final manuscript — acceptance of responsibility for all aspects of the work, integrity of all parts of the article and its final version.

Gubarev S.V.

Conceptualisation — statement and development of key goals and objectives.

Conducting research — data collection and analysis.

Text preparation and editing — drafting of the manuscript; contribution to the scientific layout.

Approval of the final manuscript — acceptance of responsibility for all aspects of the work, integrity of all parts of the article and its final version.

Statistical analysis — application of statistical and computing methods for data analysis and synthesis.

Preparation and creation of published work with data visualisation and display.

Lyubchenko D.A.

Conceptualisation — concept statement; statement and development of key goals and objectives.

Conducting research — data analysis and interpretation.

Text preparation and editing — drafting of the manuscript, its critical revision with a valuable intellectual investment; contribution to the scientific layout.

Approval of the final manuscript — acceptance of responsibility for all aspects of the work, integrity of all parts of the article and its final version.

Redko A.N.

Conceptualisation — concept statement; statement and development of key goals and objectives.

Conducting research — data analysis and interpretation.

Text preparation and editing — drafting of the manuscript, its critical revision with a valuable intellectual investment; contribution to the scientific layout.

Approval of the final manuscript — acceptance of responsibility for all aspects of the work, integrity of all parts of the article and its final version.

Resource support of research — computing equipment provision for analyses.

ВКЛАД АВТОРОВ

Алексеенко С.Н.

Разработка концепции — формирование идеи; формулировка и развитие ключевых целей и задач.

Проведение исследования — анализ и интерпретация полученных данных.

Подготовка и редактирование текста — составление черновика рукописи, его критический пересмотр с внесением ценного интеллектуального содержания; участие в научном дизайне.

Утверждение окончательного варианта — принятие ответственности за все аспекты работы, целостность всех частей статьи и ее окончательный вариант.

Губарев С.В.

Разработка концепции — формулировка и развитие ключевых целей и задач.

Проведение исследования — сбор и анализ полученных данных.

Подготовка и редактирование текста — составление черновика рукописи, участие в научном дизайне.

Утверждение окончательного варианта — принятие ответственности за все аспекты работы, целостность всех частей статьи и ее окончательный вариант.

Применение статистических и вычислительных методов для анализа и синтеза данных исследования.

Подготовка и создание опубликованной работы в части визуализации и отображении данных.

Любченко Д.А.

Разработка концепции — формирование идеи; формулировка и развитие ключевых целей и задач.

Проведение исследования — анализ и интерпретация полученных данных.

Подготовка и редактирование текста — составление черновика рукописи, его критический пересмотр с внесением ценного интеллектуального содержания; участие в научном дизайне.

Утверждение окончательного варианта — принятие ответственности за все аспекты работы, целостность всех частей статьи и ее окончательный вариант.

Редько А.Н.

Разработка концепции — формирование идеи; формулировка и развитие ключевых целей и задач.

Проведение исследования — анализ и интерпретация полученных данных.

Подготовка и редактирование текста — составление черновика рукописи, его критический пересмотр с внесением ценного интеллектуального содержания; участие в научном дизайне.

Утверждение окончательного варианта — принятие ответственности за все аспекты работы, целостность всех частей статьи и ее окончательный вариант.

Ресурсное обеспечение исследования — предоставление вычислительной техники для анализа.

INFORMATION ABOUT THE AUTHORS / СВЕДЕНИЯ ОБ АВТОРАХ

Sergey N. Alekseenko — Dr. Sci. (Med.), Assoc. Prof., Head of the Chair of Preventive Medicine, Healthy Lifestyle and Epidemiology, Kuban State Medical University.

https://orcid.org/0000-0002-7136-5571

Stanislav V. Gubarev* — Senior Lecturer, Chair of Public Health, Healthcare and History of Medicine, Kuban State Medical University.

https://orcid.org/0000-0002-1144-602X

Contact information: e-mail: gs023@yandex.ru; tel.: +7 (908) 685-66-55;

M. Sedina str., 4, Krasnodar, 350063, Russia.

Алексеенко Сергей Николаевич — доктор медицинских наук, доцент, заведующий кафедрой профилактики заболеваний, здорового образа жизни и эпидемиологии федерального государственного бюджетного образовательного учреждения высшего образования «Кубанский государственный медицинский университет» Министерства здравоохранения Российской Федерации.

https://orcid.org/0000-0002-7136-5571

Губарев Станислав Валерьевич* — старший преподаватель кафедры общественного здоровья, здравоохранения и истории медицины федерального государственного бюджетного образовательного учреждения высшего образования «Кубанский государственный медицинский университет» Министерства здравоохранения Российской Федерации.

https://orcid.org/0000-0002-1144-602X

Контактная информация: e-mail: gs023@yandex.ru; тел.: +7 (908) 685-66-55;

ул. им. Митрофана Седина, д. 4, г. Краснодар, 350063, Россия.

Dmitry A. Lyubchenko — Cand. Sci. (Med.), Assoc. Prof., Chair of Fundamental and Clinical Biochemistry in Medicine, Kuban State Medical University.

https://orcid.org/0000-0002-9207-4546

Andrey N. Redko — Dr. Sci. (Med.), Prof., Head of the Chair of Public Health, Healthcare and History of Medicine, Kuban State Medical University.

https://orcid.org/0000-0002-3454-1599

Любченко Дмитрий Александрович — кандидат медицинских наук, доцент кафедры фундаментальной и клинической биохимии медицины федерального государственного бюджетного образовательного учреждения высшего образования «Кубанский государственный медицинский университет» Министерства здравоохранения Российской Федерации.

https://orcid.org/0000-0002-9207-4546

Редько Андрей Николаевич — доктор медицинских наук, профессор, заведующий кафедрой общественного здоровья, здравоохранения и истории медицины федерального государственного бюджетного образовательного учреждения высшего образования «Кубанский государственный медицинский университет» Министерства здравоохранения Российской Федерации.

https://orcid.org/0000-0002-3454-1599

* Corresponding author / Автор, ответственный за переписку