

Promotion of a healthy lifestyle in Russia and China: The first results of COVID-19 and trends in the post-COVID economy

Sharko Elena,*

Lomonosov Moscow State University (Russia)

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Abstract

The COVID-19 pandemic has not only become a test for all mankind, but also gave reason to rethink the attitude to their health not only for people from the high-risk category, but also for everyone. Before the pandemic, the concept of a healthy lifestyle was gaining a powerful economic momentum (popularization of communities associated with fitness products, advertising, healthy products, etc.). But has the trend changed after the restrictions were eased? The purpose of this paper is to find out whether the healthy lifestyle concept affected the preservation of the health of the nation during the pandemic (is there a link between the level of national health and the degree of resistance to pandemics?). The study focuses on two countries — Russia and China. The difference in the population's perception of the healthy lifestyle concept, promotion of a healthy lifestyle at the governmental level, and the assessment of its effectiveness are determined based on the analysis of secondary statistical data, a survey of 1,230 respondents from Russia and China in late 2020 — early 2021, as well as using econometric factor analysis. The results obtained can be scaled to the rest of the BRICS countries in order to adapt existing state programs to preserving the health of nations in the future.

Keywords: healthy lifestyle, HLS concept, national well-being, BRICS, COVID-19.

JEL: I12, H51, J11, M3.

Introduction

Today, it is a generally recognized fact that the health and well-being of the population are key factors of economic and social development all over the world. The prospects

* E-mail of the author: ersharko@yandex.ru

for the development and existence of the state itself largely depend on how the process of reproducing the basis of productive forces — human resources — takes place. Young people are the key, reserve and engine of the countries' development, their present and future. The current state of youth health and the general demographic situation in society indicate that there is a real need for the development of a healthy lifestyle culture of various groups of the population of any country, primarily, the younger generation. The health of the young population is the highest value of the social and socio-economic development.

The major goal of a state's public health policy is to improve the health of all people and reduce health inequalities by improving governance and strategic leadership in the interests of health.

Popularization of a healthy lifestyle through mass media, which is the basis for the popularity of physical exercises, proper nutrition, good sleep and reduced interest in bad habits, increases the effectiveness of many aspects of public health. Due to their visual and auditory attractiveness and accessibility of television, radio, modern computer technologies, the Internet, and social networks, they significantly affect the minds of ordinary citizens. Success and popularity of something in any kind of activity is 60% dependent on promotion and successful advertising campaigns reflected in the mass media. Thus, it is the information presented by the media that is the main criterion for evaluating a healthy lifestyle and forming the right image of a healthy lifestyle. After all, ignorance, misunderstanding and prejudice form an image just as much as real actions.

In 2019, the world was faced with an unknown virus that caused the great global COVID-19 pandemic. Lots of sick people, lots of deaths, many were saved thanks to tough emergency measures on the part of the government (self-isolation regime, penalties for non-compliance with norms and rules of behavior during the pandemic, and so on). After several stages of vaccinations and three waves of the pandemic had passed, a research question arose: How did a healthy lifestyle help people during the pandemic, and did it help at all? The search for answers to this question formed the basis of this study and determined its relevance.

1. What does the HLS concept mean?

Consideration of the problem of people's attitude to the concept of a healthy lifestyle (HLS) is quite important in the conditions of the modern socio-cultural situation in the world as a whole, as well as in Russia and China in particular. Of course, the processes of globalization, informatization and commercialization have influenced values and practices of an ordinary citizen. The greatest influence is experienced by young people who intensively "absorb" new trends and values (Katic et al., 2019; van den Berg et al., 2008; Ronald & Chuk, 2008).

The living conditions of a modern person put forward urgent tasks of improving the scientific analysis of his health problems. A human being is the supreme value of society, and his health determines his harmonious development. Therefore, the health

of an individual is the key to the comprehensive development of society (Jones, 1995; Ghebrehwet, 2009; Lunau et al., 2018; Nazdrachev & Mashichev, 2020). According to M. Otnyukova, human health is a social value, an integral part of social wealth, and it depends on society how health is used, protected and reproduced. The analysis of human health becomes a necessary condition for the disclosure and improvement of human abilities and capabilities as a driving force and the highest goal of social progress (Otnyukova, 2007).

The current trend in the study of health is interdisciplinary research, which increases its theoretical and practical effectiveness. The integral science of valeology has played a substantial role in the study of how to solve health problems of a person. Valeology is the science of a healthy lifestyle, it teaches complex measures that must be applied to preserve one's own health, strengthen it and prevent diseases (Kaznacheev, 1997, 36).

Despite the development of valeological research, almost all works devoted to health pay more attention to the indicators of "pathology" than to indicators of "health." By inertia, the analysis of the predominantly negative side of the dialectical unity "disease—health" continues. At the same time, not enough attention is paid to direct health indicators, which leads to a one-sided interpretation of the problem of human health and the factors that determine it.

An important place is given to fundamental research on certain aspects of health diagnostics and monitoring: interdisciplinary research of health mechanisms and affecting factors (Kooiker & Christiansen, 1995; van Doorslaer et al., 1997; Kogan, 206); creation of databases of valeological information (Nikiforova, 2011; Tolmacheva, 2015; European Database., 2018); mathematical models (Kalachikova & Korchagina, 2015; Petrash & Murtazina, 2018; Jenatabadi et al., 2021; Wedlund & Kvedar, 2021); expert systems of evaluating health indicators (Allegra et al., 2020; Jespersen et al., 2021); and intellectual health support (Meyer, 2010; Chestnov et al., 2015; Kakani, 2020; Bent et al., 2021).

The definition of practical ways of preserving health requires the definition of the essence of the key concept of "health." Our research confirms the existence of more than 450 definitions of human health, which are offered by specialists and scientists from different scientific fields and countries. There are six main types of essential elements of the definition of health (Appendix 1, Figure 1).

It should be noted that there is no generally accepted definition of "human health." Many researchers traditionally continue to believe that the solution of this problem is exclusively a problem of the biomedical sciences. But we note that human health is also a problem of philosophy, sociology, psychology, pedagogy, economics and a number of other sciences. The lack of a constructive and unified approach to the definition of health creates difficulties and uncertainty in the results of scientific research to assess the impact of various factors on health, determine the level of health, and competently search for optimal ways to preserve health.

Within the framework of this study, the term "health" will be understood as *the result of a purposeful influence on the human body in order to preserve its functional mechanisms for a long time (nutrition, physical activity, sleep, psychological relief, balance of work and rest).*

2. The history of a healthy lifestyle in Russia and China

A healthy lifestyle (HLS) is a type of activity aimed at preserving and strengthening health. The psychological culture of a healthy lifestyle is an integral part of the general and professional culture, which is a systemic characteristic of a person. HLS is a socially, ontologically and internally determined level of assimilation, awareness, use and functioning of special psychological values, which include effective medical and psychological knowledge, skills, and abilities aimed at following a healthy lifestyle, preserving and strengthening health (Nadtochaev, 1990; Aleksander & Selesnik, 1995; Garbuzov, 1995; Noskova, 2013).

The beginning of the XX century became a turning point in the history of the formation of the concept of a healthy lifestyle in Russia and China, which distinguish the current understanding of a healthy lifestyle in these countries. Thus, we can formulate the first hypothesis of the study:

H1: The traditional concept of a healthy lifestyle (China) is more effective than the adaptive one (Russia), which leads to a higher level of health of the nation in the modern period of the economy.

In the Soviet Union, a healthy lifestyle was actively developed and supported by the state. In the USSR, the promotion of physical education was a task of national importance. There was an opinion that healthy people were able to resist the enemies from the West and demonstrate the greatness and power of the Soviet Union (Nikiforov & Dudchenko, 2017; Petrash & Murtazina, 2018).

The popularization of sports was carried out at all levels, the media constantly broadcast about the achievements of Soviet athletes, posters and other merchandise were produced. Every morning, television and radio encouraged the population to be physically active. The life of a Soviet person was considered inferior if it did not include physical activity and good health. Children went to sports sections from an early age. The morning at school began with exercises, warm-ups were also held in the classroom and after lessons. Each student was obliged to engage in physical culture, and non-compliance with sports norms or skipping classes were severely punished. In fact, the people who did not play sport were deprived of benefits and respect in society (Field, 1995).

For most adults, sports were the only right way to develop. For almost all the time of the existence of the Soviet Union, one of the most important tasks was to instill a love for sports. There were many reasons for this, but the main one was health care. Those who came to power in 1917 got a huge country with a very weak, almost absent medicine. It must be noted that in the Soviet Union, the advocacy of a HLS was more than successful. Health was a real sign of dignity and valor. At that time there was a real cult of health. With the help of promoting a healthy lifestyle and sports, the main cultural, social, economic and political tasks of the USSR were solved. Such a massive work brought enormous results — the USSR remained the strongest sports power in the world for many years.

In modern Russia, things are a little worse. Political, economic, and social problems of the 1990s had a negative impact on the physical education of the population. The promotion of sports was practically absent, as compared to the USSR. After the

“opening of borders,” a huge number of foreign goods arrived in Russia, including harmful food, alcohol, tobacco products and narcotic substances. This has led to an increase in mortality, diseases and crime. Many schoolchildren had a tobacco addiction, which led to their skipping classes and refusing to attend sports sections.

Over time, the situation began to change. After the establishment of a relative political stability, the government of Vladimir Putin began to pay more attention to the lifestyle of the population. Since January 2002, the vector of sports education has changed dramatically.¹ The main tasks were the creation of a new sports industry, the birth of a healthy generation, and instilling a love for a healthy lifestyle among young people.

Thus, over the past 20 years in the history of modern economic Russia, one can observe the complete collapse of the state-established system of healthy lifestyle of citizens (Walberg et al., 1998; Roberts et al., 2012) and the emergence of a new adaptive HLS concept (Rtveladze et al., 2012; Strategy 2025., 2020), taking into account the digitalization of society, informatization of all spheres of society, as well as relevant methodological and medical discoveries that give qualitatively new results for the nation today.

The modern concept of the Chinese national philosophy of life organization (healthy lifestyle) differs from the generally accepted concept: “Proper nutrition, sports, absence of bad habits.” The focus is still on the “spiritual” nature of a person and his psychophysical health. Let’s consider the “Chinese concept of a healthy lifestyle” in more detail.

A promising direction of studying the Chinese HLS concept, which have become a subject of general scientific consideration, is the psychosystem approach. It is presented by an international group of scientists who have substantiated the universal laws of the formation of the structure and dynamics of the development of any functional system, including a person, as a universal biological and social system of life (Jan, 1990; Zheng, 2018).

The main idea of psychosystemology is that nature (the surrounding world) and the inner world of a person develop according to uniform laws based on the principles of universality, expediency, consistency, and causality. This makes it possible to effectively diagnose, predict and model various psychological systems (Appendix 2).

An important principle of the psychosystem approach is the provision that if at least one element in the system changes, the system as a whole also inevitably changes: a healthy person (the level of medicine), a healthy nation (the social aspect), and a healthy humanity (the philosophical aspect). In accordance with the types of activities and manifestations of a person in his relations with the external environment, psychosystemology suggests forming a system of a healthy lifestyle as a system of seven levels of human relationships with the surrounding world (Appendix 2).

In the process of development of sports in various spheres of Chinese society, there inevitably occurs a differentiation of social policy, that is, the allocation of differently designed directions, sections and variations. This is due to the fact that sports, medicine

¹ The concept of an information and educational campaign for the advocacy of physical culture and a healthy lifestyle among children, adolescents and young people (2003). The State Duma of the Russian Federation. <http://lib.sportedu.ru/Press/FKVOT/2003n1/p18-24.htm>

and healthy lifestyle are generally diverse, and specific goals implemented in different circumstances of practice, as well as the ways and conditions of achieving them are not always the same (Ma et al., 2013; Khaw et al., 2021; Halawa, 2021; Zhao et al., 2017; Sun et al., 2021).

It is important to emphasize that in modern conditions, the number of harmful factors is increasing. These are such factors as tobacco use, insufficient physical activity, poor nutrition, excessive alcohol consumption and others, which do not contribute to a healthy lifestyle. On the one hand, China honors and continues the ancient traditions of the healthy lifestyle concept — the very essence of the concept has remained unchanged, but many dangerous factors that require contemporary methods of solving have also appeared in the modern Chinese economy. The main problems of the HLS in China today are obesity, infectious diseases, and a decrease in physical activity due to the digitalization of society.

3. Specifics of promoting HLS in Russia and China

Promotion of the HLS is of great importance for the development of humanity and individual nations as it is a model of human activity recognized in a certain society and aimed at preserving and improving one's own health. The HLS promotion is not a new concept. The fact that health is determined by factors not only within the health sector, but also outside it, was recognized long ago.

Health education and HLS promotion are two terms that are sometimes used interchangeably. Health education is concerned with providing health information and knowledge to individuals and organizations, as well as providing skills that allow people to voluntarily adopt healthy behaviors. This is a combination of accumulated experience designed to help individuals and communities improve their health by expanding knowledge or influencing attitudes, while the HLS promotion requires an integrated approach to health through involving different participants and focusing on different approaches (Borowiec et al., 2016). The promotion of HLS is broader and is aimed at responding to events that are directly or indirectly related to health, such as inequality, changing consumption patterns, the environment, cultural traditions, etc. (WHO. South East..., 2008).

A report, known as the Lalonde Report, published by the Government of Canada in 1974, challenged the traditional “biomedical concept” of health, opening the way for an international discussion about the role of non-medical determinants of health, including individual risky behavior. The concept of health care sets out 4 “basic pillars” of a healthy nation: lifestyle, environment, health organization, and human physiology. The Lalonde report was criticized by skeptics as a ploy aimed at stopping the growth of health spending in governments by adopting health promotion policies and shifting responsibility for health to local authorities and individuals (Terris, 1992, 267; WHO Geneva..., 1998; Glouberman & Millar, 2003, 389; MacDougall, 2007, 957).

Growing public health expectations around the world prompted WHO, in partnership with Canada, to hold an international conference on promoting a healthy lifestyle in 1986.

It took place in Ottawa and not only prepared the “Ottawa Charter for Health Promotion,” but also served as a prelude to subsequent international conferences on health promotion. The Charter defines the HLS promotion as one of the following measures (Milestones in Health Promotion, 2009):

- a) formatting sound public policies that combine diverse but complementary approaches, including legislation, tax measures, taxation and organizational changes, in order to develop policies that promote equality;
- b) creating of favorable conditions;
- c) supporting the activities of organizations by empowering organizations;
- e) developing personal skills by providing information, health education and improving the skills to maintain health;
- e) reorienting of medical services in HLS promotion, abandoning the simple provision of clinical and therapeutic services.

The main directions of the HLS promotion activities defined in the Ottawa Charter are of a comprehensive and complementary nature and form the basis of all relevant draft laws and state programs to preserve and support the health of nations around the world.

The main methods of HLS promotion in Russia can be divided into 4 groups: oral, printed, visual (pictorial) and combined promotion. The most popular method is oral promotion because it is simple, economical and accessible organizationally. Lectures, conversations, discussions, conferences, circle classes, quizzes — these events will be more effective for a certain circle of interested people, so this is not the most effective method for young people (Vartanova, 2019).

Print advertising is a diverse and accessible method that a person sees every day (an article, a memo, a leaflet, a newspaper, a magazine, a booklet, a brochure, a book, a slogan). For example, a sign with the inscription “No smoking” is a slogan, and in accordance with the adopted law on the prohibition of smoking in public places, it is very common. This type of printing products most often touches on the topics of bad habits: smoking, drug addiction, alcoholism. At the same time, the problem of combating these bad habits is very relevant for the modern young generation (Vartanova, 2019).

The visual method is quite diverse in terms of the number of tools included in it. First of all, these are art objects, such as posters, video clips, as well as all other kinds of reproduction of an idea through art. TV broadcasting can also be included in this group, and this is one of the most effective methods (Trykash et al., 2020).

A modern person spends a lot of time in front of a TV or computer screen, which shows a multitude of programs about healthy nutrition, physical training, sports, medicines, treatment of diseases, and much more. We can also see a huge amount of advertising, whether it is of a gym, fitness center or sports equipment, or social advertising. However, today more and more young people refuse to watch TV, but only because it is replaced by the Internet, where you can find everything you need, learn what you want, and all this in details and right now.

Thus, today the modern informatization of all mass media is fully represented on the Internet — gif images, mems, short videos, blogs, live streaming can also be attributed to new forms of promotion. On the personal pages of individuals who adhere to the

healthy lifestyle concept one can find all forms of promotion. Among other content, there are various ratings of sites about healthy lifestyle,² lists of the best healthy lifestyle bloggers recommended for following,³ books and podcasts about healthy lifestyle,⁴ etc.

As of mid-2021, there are 149288 media outlets in Russia registered by the Roskomnadzor, of which only 26.34% belong to the public sector, and the rest belong to the private sector (Mass media in Russia, 2021).

As the modern Chinese scientist Wang Li notes, the HLS promotion is the best prevention of diseases, strengthening health and improving the quality of life of the population (75). By transforming professional medical information into popular information, the mass media thereby spread the values of a healthy lifestyle and have a positive impact on the public consciousness of Chinese citizens.

Researchers from different countries agree that today the media in China is an industry, and this industry is one of the key and profitable sectors of the modern economy, as well as one of the important levers of public promotion. Tracing the transformation of the newspaper business into an industry, Austin Jun Luo provides data showing that the most important trend in the development of the media market in China is concentration of media leading to formation of newspaper-magazine and multimedia enterprises based on system-forming newspapers. This often happens through the absorption of unprofitable non-party newspapers by influential periodicals of the Communist Party of China. Today, there are 41 concerns operating in the country, the largest of which is the Shenzhen Publishing Group (Luo, 2015).

In the field of electronic media, the Chinese Broadcasting, Cinematography and Television Group was established, which includes the largest and most expensive state assets: central TV (CCTV), the Corporation of the Chinese Radio and TV Network, the Central National Radio Station and International Radio, the Chinese Cinematography Group, etc. (China entertainment..., 2016).

Currently, there are three categories of media in China: traditional media, Internet media and mobile media. Newspapers, periodical journals, books, radio, television and movies are in the category of traditional media, whereas websites, video sites, search engines, social media, online games and electronic commerce are classified as Internet media. Each type of media associated with handsets could be defined as mobile media. In traditional media, the owner is most often the CPC or the government. Usually, telecommunication carriers or mobile service providers control and establish aspects of Internet media and mobile media, either independently or jointly with investment companies (Lai, 2021).

The success of the Chinese people is based on the carefully preserved history of one of the world's greatest civilizations, the experience of reforms, and measures to preserve their own culture. It is also worth noting that any advertising and promotion in China always takes into account its consumer, and there is also strong public censorship

² <https://rocit.ru/raccoon/98>

³ <https://beautyhack.ru/telo/s-polzoy-15-zozh-blogerov-na-kotoryh-stoit-podpisatsya-priamo-seychas>

⁴ <https://blog.mann-ivanov-ferber.ru/2017/12/28/50-sajtov-i-knig-dlya-tex-kto-vedet-zdorovyj-obraz-zhizni/>

in addition to state censorship. Almost 95% of all media outlets in China are controlled by the government.

The promotion of a healthy lifestyle in China belongs to one of the types of social advertising. Many topics of social campaigns in Russia and China coincide. Common topics include: the harm of smoking, a healthy lifestyle (including AIDS prevention), the importance of donation, environmental protection and consumption of eco-friendly materials and products, the danger of drugs, respect and care for the elderly, as well as health support at the age of 55+ and demography in the national context (in Russia it is the promotion of large families, and in China — the policy of 1 child — 1 family).

The popularity of public advertising is growing both in Russia and in China; its signs, themes and slogans are used in commercial advertising. But we must not forget that social advertising and promotion cannot solve the existing problem of preserving the health of the nation. This is just a way to attract attention and recommend an alternative or provide information, but the government should take it upon itself to solve these problems and regulate the level of health of the population of its country within the framework of state laws, projects and programs.

Thus, we can formulate the second hypothesis of the study:

H2: HLS promotion is effective if it is initiated and controlled by the government.

Certainly, the fashion of “being healthy” depends on the model of HLS promotion in a particular state. The generalized results of the study are presented in Appendix 3, Table 3.1.

According to Table 3.1, all the prerequisites have been met at the state level for the population to maintain a healthy lifestyle, receive help in combating bad habits, undergo a high-quality medical examination and receive a diagnosis at the early stages of various diseases. This fact is confirmed by the impressive health care expenditures of the analyzed countries (Appendix 4, Table 4.1).

The conclusions that can be drawn in accordance with Table 4.1 are as follows:

- 1) according to the available data of the world’s leading analytical companies, in comparison with 2018, healthcare costs (treatment, maintenance of medical institutions, payment of medical personnel and implementation of programs to support health and promote a healthy lifestyle) decreased in all countries included in this study;
- 2) until 2019, the trends in strengthening the health of nations and promoting a healthy lifestyle were preventive, not reactive; this is reflected in the last column of Table 4.1.

4. The COVID-19 pandemic: Cases of Russia and China

In the spring of 2020, the whole world was gripped by the global pandemic of the new coronavirus infection COVID-19. Life in all countries of the world was put on temporary pause, slowed down, stopped. Restrictions imposed in connection with the coronavirus pandemic had a significant impact on many aspects of life — on the

social, political, economic, and cultural spheres. Private business and the tourism sector suffered significant losses, many people lost their jobs, but its greatest impact the pandemic had on people's health.

Taking into account the fact that health is more influenced by factors that are not related to the health sector, the promotion of a healthy lifestyle requires coordinated actions in the field of awareness-raising, financial investments, capacity-building, legislation, research and establishment of partnerships between the state and representatives of the fitness industry. This stakeholder approach includes the participation of various ministries, public and private sector institutions, civil society and communities under the auspices of the Ministry of Health.

Depending on the implemented model of promoting a healthy lifestyle, different states receive different indicators of the quality of life of their population. Table 4.1 (Appendix 4) shows the characteristics of the quality of life indicators of individual countries before the COVID-19 pandemic.

According to Table 4.1, the healthiest nation in 2019 was Italy (Europe), the highest life expectancy was in Finland (Europe) and in the USA, the highest death rate was in Russia.

These indicators are influenced by many factors: the economy, innovations, the level of health care costs, the climatic and environmental conditions of the country. But among the global factors, one can also highlight the scale of the organization of healthy lifestyle promotion at the state level.

On the one hand, the data from Tables 3.1 and 4.1 are encouraging, because at the beginning of 2019, the level of health of the population of these countries was high, which confirms the effectiveness of previously implemented programs and methods of preserving the health of nations. Therefore, it was natural to reduce the share of costs (for supporting HLS, it is enough to establish a regular average level of costs, since their increase from year to year is not economically justified). On the other hand, the expenditures of states on combating the pandemic and providing urgent measures for prevention and treatment were attributed to another item of expenditure of the national budget, since this fact and the rapid development of the disease could not be predicted by any forecasts and patterns.

Thus, we can formulate the third hypothesis of the study:

H3: The higher the health indicators of a nation, the more resistant the country's population is to the effects of pandemics.

But the most important question and the hypothesis of this study is as follows:

H4: Adherents of a healthy lifestyle are less likely to get sick with coronavirus than those who do not monitor their health at all.

5. Methodology

The study was conducted in several stages. At the first stage, statistical information was collected from secondary sources. The focus of the study was on Russia and China, plus several countries of the European Union (Germany, Italy, France and Finland) and the United States were selected for comparison and demonstration of global trends.

Key indicators for data collection include: current population, life expectancy, death rate, health grade, the share of the health budget in % of GDP, number of coronavirus cases, the number of deaths from coronavirus, the number of people who recovered from coronavirus.

At the second stage, a survey of Russian (780) and Chinese (450) respondents was conducted (by means of an online questionnaire in Google-forms and written answers in various messengers and social communities). The questionnaire was developed in strict accordance with generally accepted procedures (Churchill, 1979). The questionnaire includes 4 blocks: (1) how the respondent understands the HLS concept, and its place in his life; (2) the role of the government in the HLS promotion; (3) personal estimation of the coronavirus situation; (4) social and demographic profile.

The quantitative stage of the study, based on the data obtained from a survey of representatives of various communities in social networks, students and just random respondents in Russia and China, was conducted in the period from October to December 2020 — among Russian respondents, and in the period from May to July 2021 — among Chinese respondents. Thus, a sample for two periods (2020 and 2021) was obtained, which covers two nations and almost all age categories from 18 to 60 years. The main characteristics of the resulting sample are presented in Appendix 5, Table 5.1.

At the quantitative stage of the study, the questions were designed to measure three aspects of the relationship between the role of the HLS concept in the respondents' life and the situation with the COVID-19 pandemic: adherence to the HLS concept; the share of expenditures for maintaining health in personal budgets; and the number of people in the respondent's immediate environment who got sick with coronavirus.

The question was formulated as: "Can you say that the HLS concept is about you?" A 3-point scale was used for the answers, where: 0 — I only follow the principles of a healthy lifestyle from time to time or absolutely not; 1 — it is difficult to determine or 50/50; 2 — I follow many principles, but not regularly or this is definitely about me.

To assess the share of expenditures for maintaining health in personal budgets of respondents, the question was formulated as: "Determine (approximately) how much of your monthly budget you single out for keeping your health (doctor's fees, wellness procedures, purchase of medicines, sports and physical culture, healthy leisure, etc.)." A scale from 0.0 to 1.0 was used for the answers and four variants of budget shares were provisionally identified: 1 — less than 10%; 2 — 10–25%; 3 — 1/3 of the budget; 4 — more than 50%.

To identify the number of people infected with coronavirus in the respondent's close environment, a direct question was formulated: "During the COVID-19 pandemic (waves 1 and 2), in your environment: no one got sick (0 people); some people got sick among my friends, but there are not many of them (from 1 to 5 people); many people got sick with coronavirus (more than 5 people)."

During the analysis, the Gretl OLS model was used (*ordinary least squares*), in which the dependent variable is the logarithm of the share of the respondent's personal budget allocated for health preservation (*l_expe*), while the number of coronavirus cases in the respondent's close environment was chosen as the independent variable

(*covid*). Also, for the accuracy of the model, an additional fictitious variable was added – the respondent's adherence to the HLS concept (*hls*), according to the thesis that the more a person monitors his health, the more money he spends on preserving it.

After standardized and non-standardized regression coefficients were determined, the equation of the model has the following form:

$$\hat{Y}_t = \beta_0 + \beta_1 * covid + \beta_2 * hls.$$

Non-standardized coefficients were used to test the hypothesis, and standardized coefficients were used to determine the aspects that had a greater impact on the effectiveness of healthy lifestyle during the pandemic.

6. Results of hypothesis testing

The questionnaire is presented in Appendix 6. It reflects the results of the survey of Russian and Chinese respondents regarding the HLS concept — questions 1, 2, 4.

According to *H1*, the traditional concept of a healthy lifestyle (China) is more effective than the adaptive one (Russia), which leads to a higher level of health of the nation in the modern period.

Based on the data obtained, the following can be summarized:

- a) In the perception of the Chinese respondents, the HLS concept is more fragmented — there is an almost uniform distribution of responses on the HLS aspects. At the same time, 74.4% of the Russian respondents perceive a healthy lifestyle as a single and integral system;
- b) Almost three-quarters of all respondents believe that the HLS concept is available to everyone, given the will, as today there are thousands of programs with different levels of strictness of compliance with the principles of healthy lifestyle concepts available to various categories of citizens both in Russia and in China;
- c) In general, 57.6% of respondents in Russia and 48.9% in China adhere to the HLS concept in their life; almost 25% of respondents from both countries do not follow the HLS principles; and the percentage of those who are “not sure” is higher in China (it is necessary to strengthen the influence of the promotion of the healthy lifestyle concept on this group of residents in order to increase the values of the health indicators of the nation).

In general, the results of data obtained confirm Hypothesis 1 of this study.

To confirm Hypothesis 2, the second set of the questionnaire was used, which contained the perception of the HLS promotion by the respondents and their assessment of the government's contribution in the formatting of the HLS concept at the national level — questions 3, 6, 7, 8 (Appendix 6).

It is important to note that 26.9% and 28.9% of Russian and Chinese respondents, respectively, perceive the HLS promotion as commercial advertising, and only 10.3% and 17.8 of them perceive it as a direct motivation to action. In China, the promotion of the HLS concept is more effective.

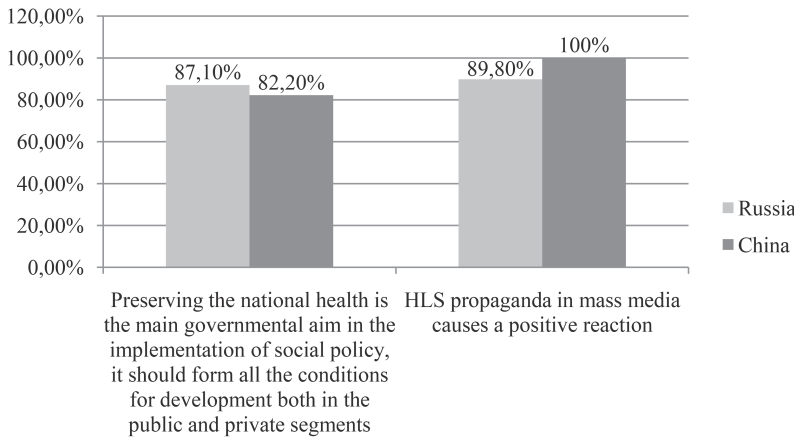


Source: calculated by the author based on data for 2020–2021.

Figure 1. Perception of the HLS concept by Russian and Chinese respondents (%)

A distinctive feature of the perception of the HLS promotion in Russia and China is the difference in methods (Figure 2).

- for Russians — social networks and communities (35.9%); preventive conversations in schools, universities, at work, in medical institutions (26.9%); and blogging (21.8%);
- for Chinese — social networks and communities (44.4%); outdoor advertising and posters (17.8%); television (13.3%).



Source: calculated by the author based on data for 2020–2021.

Figure 2. Perception of the HLS promotion by the respondents and their assessment of the government's contribution in the formatting of the HLS concept at the national level (%)

Hypothesis 2 (*HLS promotion is effective if it is initiated and controlled by the government*) is confirmed.

Appendix 7, Table 7.1 shows statistical data on the spread of coronavirus in the analyzed countries as of 25.01.2021.

As can be seen from Table 7.1, the United States, Russia and France account for the largest number of COVID-19 cases (per 1000 citizens), while Finland and China account for the smallest number of infected people. The maximum number of people died from COVID-19 in the United States and Italy, the smallest — in Finland and China; the United States and Russia have dealt with the virus in the most efficient way.

According to *H3*, the higher a nation's health indicators, the more resistant the country's population is to the effects of pandemics. The national level of health care in China is 42.3% higher than in Russia, and the death rate in the normal period (before the pandemic) exceeds the Russian 3 times. At the same time, 2.58% of the Russian population is infected with coronavirus and 0.05% died; as for China, only 0.01% of the population died. In general, the results of comparing the key indicators confirmed Hypothesis 3 of this study.

The task of the final stage of the study was to confirm Hypothesis 4 using econometric calculations and checking the OLS of the model.

The equation of the model has the following form:

$$\widehat{l_expe} = -2.12 + 0.0209 * covid + 0.114 * hls + \varepsilon_i$$

$$(0,0509) \quad (0,00631) \quad (0,0319),$$

$$n = 1181, R^2 = 0,022$$

(standard errors are indicated in parentheses).

Standardized and non-standardized regression coefficients were determined (Appendix 7, Table 7.1).

The coefficient for independent variable *covid* is positive and statistically significant at the significance level of 10%, which means that it is possible to reduce the risk of contracting coronavirus by increasing health care expenditures by 2%, all other things being equal. In addition, the significance level is high for the *hls* variable (follow the HLS concept), which indicates that this variable has an impact and is correctly included in the model. But a low *R-squared* indicates that there are other important factors that were not taken into account in this model (this point is not in the focus of this study, but the expansion of the model factors can become the basis for future research on this subject).

Hypothesis 4 (*Adherents of a healthy lifestyle are less likely to get sick with coronavirus than those who do not monitor their health at all*) was not confirmed.

Conclusions

An important result of the study can be formulated as follows: Regardless of the economic level of development of the country and the intensity of HLS promotion, countries with a larger population are at the highest risk of rapid spread of the virus. In such countries,

the most effective measures to contain the pandemic are restrictive measures, such as self-isolation and a strict ban on staying in public places for a long time.

In 2021, the situation with the pandemic is gradually improving and the trend towards expanding the scale of a healthy lifestyle and improving the health of the population of the studied countries will be more effective if the following measures are implemented and updated at the level of national projects aimed at supporting and preserving the health of nations:

- 1) It is necessary to continue the promotion of HLS (increasing the number of sports sections, fitness centers, swimming pools, running and cycling marathons) as the main task of state programs to preserve the health of the nation;
- 2) It is necessary to organize state support for manufacturers of smart watches and fitness trackers as important and innovative tools for monitoring the health of the population (both on the part of state health authorities and personal control of citizens over their own health). During the pandemic, the number of people who began to play sports on their own instead of visiting gyms has increased, and wearable devices will help them track physical activity, pulse and other body indicators. These devices will allow us to improve the monitoring of the state of health of the nation as a whole, as the transmitted data on the state of health of people will allow us to identify at an early stage trends in deteriorating public health at the local, regional and national levels;
- 3) It is necessary to organize interaction of developers of health and fitness devices with health authorities in order to strengthen the effectiveness of implemented programs to preserve the health of the nation.

Today the HLS promotion is more relevant than ever. The health scenario is at a unique crossroads as the world is facing a “triple burden of disease” formed by an unfinished agenda of infectious diseases, new and emerging diseases, as well as an unprecedented increase in non-communicable chronic diseases and pandemics.

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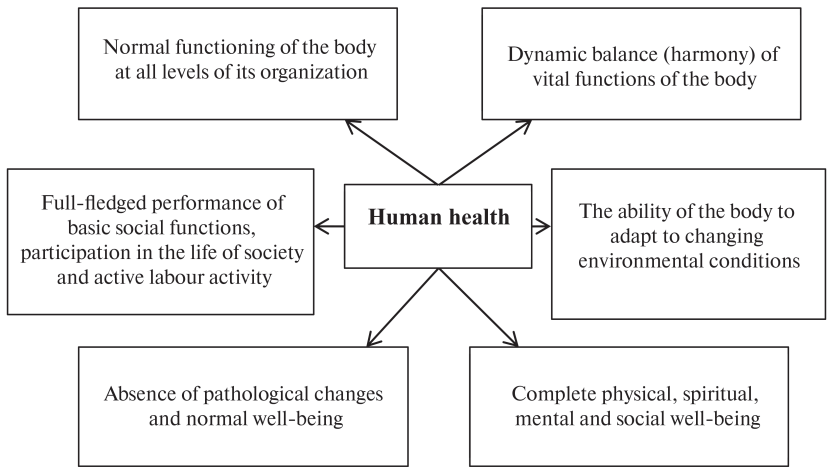
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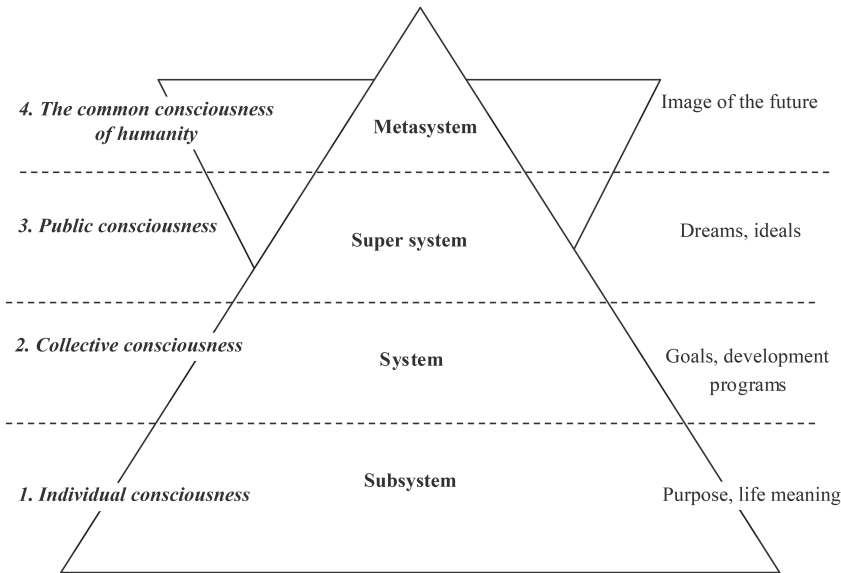
Appendix 1



Source: compiled by the author.

Figure 1.1. Research design for the bibliometric study

Appendix 2



Source: (Jan, 1990).

Figure 2.1. Hierarchy of systems — levels of the system complex

Table 2.1. 7 levels of the system of human relations with the surrounding world (Chinese HLS concept)

No	The system of human’s relationship with the world	Levels of development	Human needs	Levels of the psychological system research
7	Man and the world of universal human relations	Levels of social development	Developing (evolution of being)	Psychoconceptual (worldview: purposeful human development)
6	Man and the world of public relations		Universal values	Psychoenergetic (values of personality culture: creative development, awareness and application of general patterns of development in one’s life)
5	Man and the world of collective relations		Self-actualization	Psychosocial (collective creativity: professional maturity and the development of creative restructuring of the external world)
4	Interpersonal communication	Transfer from individual to general	Recognition and respect	Psychogenetic (the ability to integrate with others, factors and incentives for improvement and development)
3	Man and the information world	Levels of individual development	Cognitive needs	Psychocognitive (mental development: the ability to think, manage circumstances, concentrate thoughts, plan activities)
2	Man and the world of emotions, feelings		Care needs	Psychoemotional (emotional and sensitive development)
1	Man and the material world		Biological needs	Psychophysical (physical health, hygiene and everyday life, nutrition and material safety)

Source: (Jan, 1990).

Appendix 3

Table 3.1. HLS promotion models in different countries (before and after 2019)

Country	Parameters		
	Main focus of promotion at the government level	Main legislation on HLS promotion	HLS programs
Russia	HIV/AIDS smoking obesity diabetes	Federal Law “On Sanitary and Epidemiological Welfare of the Population.” Federal Law “On Tobacco Smoking Restriction,” “On the accession of the Russian Federation to the WHO Framework Convention on Tobacco Control.” Federal Law “On the Quality and Safety of Food Products,” “On Immunophylaxis of Infectious Diseases,” “On Preventing the Spread of the Disease Caused by the Human Immunodeficiency Virus (HIV infection) in the Russian Federation,” “On Preventing the Spread of Tuberculosis in the Russian Federation.” Order of the Ministry of Health “On the Approval of the Strategy for the Formation of a Healthy Lifestyle of the Population, Prevention and Control of Non-Communicable Diseases for the period up to 2025” ⁵	Program “Healthy Russia” (2009–2019). Project “Formation of a healthy lifestyle” (2017). Program “Healthy nation — healthy Russia” (2020). Project “Network of consultative and diagnostic centers of healthy nutrition in Federal districts and subjects of the Russian Federation.” Federal project “Strengthening of public health”
China	HIV/AIDS smoking obesity danger of drugs 1 child in the family timely diagnosis of the state of health	Resolution of the Government of PRC “On Further Strengthening Work to improve Health Care in Rural Areas.” Strategy “Healthy China.” Notification of the Government of PRC “On Strengthening the Management of the Consultation on Remote Treatment.” The Law of PRC “On the Prevention of Infectious Diseases.” The Law of PRC “On Biological Safety”	Priority project for the implementation of the reform of the system of medicine, pharmacy and healthcare for the nearest period of time. Proposals for deepening the reform of the medical, pharmaceutical and healthcare systems. Plan and project for the implementation of the deepening of the reform of the system of medicine, pharmacy and healthcare for the period of the 12 th five-year plan Program “Healthy China–2030”

⁵ Strategy for the formation of a healthy lifestyle of the population, prevention and control of non-communicable diseases for the period up to 2025 (2020). Order of the Ministry of Health of the Russian Federation of 15.01.2020 N8. <https://www.garant.ru/products/ipo/prime/doc/73421912>

Table 3.1. Continued

Country	Parameters		
	Main focus of promotion at the government level	Main legislation on HLS promotion	HLS programs
USA	obesity	For comparison, data for the US and the EU The US Law “On Saving and Accessibility of Healthcare;” The US Law “On the Revitalization of Cities and the Creation of Acceptable Living Conditions,” amendments to the US Law “On Primary and Secondary Education” of 1965 “On the Compliance of School Physical Education Programs with the Minimum Requirements of WHO”	Physical Activity Guide lines for Americans Dietary Guidelines for Americans A Public Health Action Plan to Prevent Heart Disease and Stroke Healthy Communities Let’s Move The Million Hearts Initiative National Initiative to Improve Adolescent Health National Prevention Strategy
EU (Germany, Italy, France, Finland)	high-quality service for patients/users focused on health promotion (the role of medicine in the concept of healthy lifestyle) oncological diseases	Treaty on the Functioning of the European Union (Article 168 “On Health Care”); Decision on an Action Plan to Fight Cancer; Prevention of AIDS and Some Other Infectious Diseases; Decision on the European Union’s Actions in Relation to Rare Diseases	Project “Health promotion in primary health care — general practice and community pharmacy” Health screening program, opportunistic screening and lifestyle counseling Population vaccination program National cancer screening programs Health 2020 policy

Source: developed by the author based on (Ball et al., 2013; Field, 1995; Geense et al., 2013, Huffman & Rizov, 2007; Kaner et al., 2018; Roberts et al., 2012; Rtveladze et al., 2014; Sarang, 2007; Stead et al., 2013; Sun et al., 2021; Wang & Zakus, 2016).

Appendix 4

Table 4.1. The share of healthcare in the budgets of Russia and China before and after 2019

Countries	2018 (% of GDP)	End of 2019 (% of GDP)	Trend
Russia	9.8	5.3	Health promotion is still underdeveloped but is currently receiving increasing attention in a number of regions
China	5.4	7.0	Disease prevention is another traditional health issue, but the focus is still on the fight against infectious diseases, and large-scale activities in some provinces are not always based on reliable evidence and cannot reach the right category of people at greatest risk
USA	22.5	17.1	There is a combination of efforts of the legislative and executive authorities and public organizations to attract people to health-improving motor activity and leading a healthy lifestyle
EU:			
Germany	20.0	11.1	Many aspects of health care intersect with consumer protection and environmental protection measures, the purpose of which is also to protect human health. More attention should be paid to the active involvement of patients and health professionals in the development of research activities, and local and socio-cultural contextual factors should be more carefully taken into account when developing research projects in order to increase acceptability and sustainability
Italy	13.2	No data	
France	14.8	11.5	
Finland	13.3	No data	

Source: developed by the author based on (WHO. Global Health..., 2018; WHO and World Bank..., 2019).

Table 4.2. Characteristics of the quality of life indicators of individual countries before the COVID-19 pandemic (2019)

Indicators	Russia	China	USA	EU			
				Germany	Italy	France	Finland
Current population, million people	146.3	1436.6	329.1	83.13	60.0	67.5	5.6
Life expectancy, year ⁶	70.3	75.2	80.0	80.7	66.9	81.9	81.5
Male	64.6	73.1	78.8	78.2	65.0	78.7	78.7
Female	76.0	77.4	81.2	83.1	68.8	85.0	84.2
Death rate (for 1000 person) ⁷	24.6	7.4	17.8	9.9	7.1	11.1	9.9
Male	35,0	9.5	22.1	13.3	9.1	14.7	13.7
Female	14.2	5.3	13.4	6.5	5.1	7.4	6.1
Health Grade ⁸	26.4	62.5	73.0	83.1	91.6	86.9	85.9

Source: developed by the author.

Appendix 5

Table 5.1. The main characteristics of the sample

Parameter	Variety	Russia		China	
Sex	Male	640	82,1%	230	51,1%
	Female	140	17,9%	220	48,9%
Age	18–24	30	3,8%	300	66,7%
	25–34	230	29,5%	140	31,1%
	35–44	270	34,6%	10	2,2%
	45+	250	32,1%	0	0,0%

Source: calculated by the author.

The respondents represent such cities as Moscow, St. Petersburg, Chelyabinsk, Murmansk, Nizhny Novgorod, Vologda, Vladimir, Cheboksary, Veliky Novgorod, Ivanovo, Tambov, Tula, Krasnodar, Verkhny Tagil, Tomsk, Yaroslavl, Khimki, Chelyabinsk,

⁶ Life expectancy by country for 2019 according to the UN (2019). <https://worldtable.info/gosudarstvo/tablica-prodolzhitelnost-zhizni-po-stranam.html>

⁷ Countries with the healthiest inhabitants. (2019). Bloomberg Rating 2019. <https://basetop.ru/rejting-stran-samyimi-zdoroviyimi-zhitelyami-2019/>

⁸ The rating uses the values of the integral indicator, where 100 points is the best indicator of the health of the nation, and 1 point is the worst.

Pskov, Magnitogorsk, Ryazan, Samara, Yekaterinburg, Arkhangelsk, Voronezh, and some small cities of Russia; Shanghai, Chengdu, Kaifeng, Zhengzhou, Zhoukou, Guangzhou, and some small cities of China.

Appendix 6

Questionnaire

Dear respondent,

I am conducting a study to assess the impact of healthy lifestyle promotion, government policy in preserving the national health and the role of healthy lifestyle during the COVID-19 pandemic in different countries. I will be delighted if you take part in this study and answer several questions of the questionnaire.

1. What definition of healthy lifestyle suits you the most?

- no bad habits
- regular sports activities
- support and improvement of health
- healthy nutrition and frequent outdoor activities
- system of rules and habits for preserving health

2. Can you say that the HLS concept is about you?

- absolutely yes
- I follow many principles, but not regularly
- difficult to determine: 50/50
- sometimes I follow HLS principles
- definitely not

3. What, in your opinion, is the role of the government in preserving the health of the nation?

- preserving the national health is the main goal of the government in implementing social policy
- the government should create all conditions for development in both the public and private segments
- the government can influence a healthy lifestyle only with the help of laws and state programs
- the government should not control and initiate the healthy lifestyle promotion

4. In your opinion, a HLS should be:

- available to everyone, if it does not require additional expenditures in the personal budget
- available to everyone, the cost of this does not significantly affect the personal budget
- not available to everyone, as it always requires large expenses from the personal budget
- available only to people with a high level of income

5. **Determine (approximately) how much of your monthly budget you allocate to maintaining health (doctor's fees, wellness procedures, purchase of medicines, sports and physical culture, healthy leisure, etc.)**
 - over 50%
 - 1/3 of the budget
 - 10-25%
 - Less than 10%
6. **When you see ads or healthy lifestyle promotion, what is your reaction?**
 - positive — motivates you to a healthy lifestyle
 - neutral — it is difficult for the mass media to convince you
 - negative — annoys you
7. **How does the HLS promotion in the mass media work?**
 - influences the decision to follow the principles of a healthy lifestyle
 - informs about the opportunities and ways of maintaining your health
 - forms the correct standard of a healthy lifestyle in your mind
 - encourages you to use commercial services in the field of beauty and health (this is just advertising)
8. **Which method of the HLS promotion, in your opinion, is the most effective?**
 - television
 - social networks and communities
 - outdoor advertising and posters
 - print media (newspapers, magazines, brochures, booklets)
 - blogging
 - preventive conversations in schools, universities, at work, in medical institutions
9. **What do you think about the importance of a healthy lifestyle during the COVID-19 pandemic?**
 - HLS has helped people in your environment not to get sick with coronavirus
 - regardless of the lifestyle, people in your environment were sick with coronavirus with varying degrees of severity
 - people in your environment who follow the principles of healthy lifestyle were sick with coronavirus during the pandemic
10. **During the COVID-19 pandemic (waves 1 and 2), in your environment...**
 - most people got sick with coronavirus
 - there are people who are sick among friends, but they are few
 - nobody got sick
11. **In the post-covid period, your approach to healthy lifestyle can be expressed by the following statement:**
 - I often think about preserving my health
 - Disease prevention and healthy lifestyle cannot protect me from pandemics and serious infections
 - If the promotion of a healthy lifestyle is more effective on the part of the state, then the level of health of the nation will be higher
 - Other _____

12. Sex

- Male Female

13. Age

- 18–24 years 35–44 years
- 25–34 years over 45

14. Where are you from (country, city)? _____**Appendix 7****Table 7.1.** Statistical data on coronavirus infection in countries (as of 25.01.2021)

Countries	Number of coronavirus cases	% of current population	Per 1000 citizen	Number of deaths from coronavirus	% of current population	Number of recoveries from coronavirus
Russia	3774672	2.58	25.7	71076	0.05	3202483
China	107329	0.01	0.1	4848	0.01	91735
USA	25443876	7.73	76.8	424275	0.13	15222909
Germany	2166636	2.61	26.1	54083	0.07	1881933
Italy	2485956	4.14	41.3	86422	0.14	1917117
France	3138498	4.65	45.6	74250	0.11	225267
Finland	43616	0.77	7.9	655	0.01	31000

Source: developed by author based on (Coronavirus: Table., 2021).

Table 7.2. Model: OLS, using observations 1-1230 (n = 1181)

Dependent variable: l_exp

Missing or incomplete observations dropped: 49

	Coefficient	Std. Error	t-ratio	p-value	
const	−2.11967	0.0509228	−41.63	<0.0001	***
covid	0.0208890	0.00630875	3.311	0.0010	***
hls	0.113785	0.0319009	3.567	0.0004	***
Mean dependent var	−1.911930		S. D. dependent var		0.948161
Sum squared resid	1037.559		S. E. of regression		0.938499
R-squared	0.021938		Adjusted R-squared		0.020277
F(2, 1178)	14.18686		P-value (F)		8.16e-07
Log-likelihood	−1599.302		Akaike criterion		3204.604
Schwarz criterion	3219.826		Hannan-Quinn		3210.342

Note: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.