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Harvesting and Cultivation of Medicinal Plants as a Health-Preserving Practice and a Form of Responsible Nature Management

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ABSTRACT. The article addresses the relevant issue of self-harvesting medicinal plants as a form of hobby that holds significant potential for health promotion and the development of ecological culture. It analyzes contemporary scientific publications emphasizing the need for a responsible and informed approach to this practice, based on knowledge of botany and ecology, support from like-minded communities, and legislative regulation. It is noted that only a comprehensive combination of educational activities, social interaction, and legal control can ensure the safe use of medicinal plant raw materials, preserve biodiversity, and minimize health risks to humans. The article discusses the advantages and potential dangers of self-harvesting medicinal plants, making it an important contribution to the development of health-preserving technologies and sustainable natural resource management.

KEYWORDS: medicinal herb harvesting; plant-based medicinal raw materials; phytotherapy; healthy lifestyle; health-saving practices

Health and longevity are among the foremost values in contemporary society. Current research from the World Health Organization and other reputable sources corroborates that an individual's lifestyle exerts a significant influence on their health, often outweighing the impact of medical interventions [1, 2]. Consequently, lifestyle (behavioral determinants) accounts for approximately 36% of a person's health status, a considerably greater proportion than that attributable to medical factors (Fig. 1).

Consequently, the promotion of healthy lifestyles, encompassing physical activity, proper nutrition, and intellectual development, has become a priority for governmental programs and public initiatives. Particular emphasis is placed on non-occupational activities and hobbies, which contribute not only to psychological well-being but also to the enhancement of overall health.

In accordance with the Decree of the Government of the Russian Federation No. 830-r of April 7, 2025, a primary objective is to establish conditions that facilitate the realization of the personal potential of senior citizens and expand their participation in societal life. It is imperative to foster cognitive abilities, promote moderate physical activity, and enhance the degree of socialization. Furthermore, it is recommended to increase the accessibility of healthy nutrition and high-quality pharmaceutical products.

An individual's lifestyle, in addition to work, rest, and diet, encompasses non-occupational activities, i. e., pursuits to which individuals regularly dedicate their free time based on personal volition – commonly termed hobbies. The significance of hobbies for various aspects of health, both among individuals of working age [3, 4] and the elderly, has been highlighted by numerous researchers [5, 6].

In this context, the self-directed process of acquiring medicinal raw materials of plant origin – encompassing the search, collection, and cultivation of therapeutic plants – is examined as a crucial component of health-promoting practices that fosters an active and conscientious lifestyle. The present study investigates the role of this process in supporting health and longevity, as well as contemporary approaches to the utilization of plant-derived medicinal raw materials.

Contemporary pharmaceutics is progressively transitioning away from the traditional use of wild-harvested medicinal plants towards purified molecules and phytopharmaceuticals cultivated under controlled conditions utilizing biotechnological methods. This approach facilitates the standardization of bioactive substance (BAS) content, thereby enhancing the quality and safety of plant-derived medicinal products. The concept of phytoneering is predicated on the integration of advanced scientific research and innovative manufacturing technologies, which ensures the maximization of the therapeutic potential of plants while preserving and augmenting their beneficial properties in the final formulation [7, 8].

However, contemporary medicine and science popularizers strongly advise against the self-collection of medicinal plants, and such warnings are justified due to several significant risks. These risks include misidentification of plant species, potential contamination of raw materials with undesirable pollutants [9], unstable and non-standardized levels of bioactive substances (BAS) that depend on growing conditions and the characteristics of a specific chemovar, as well as the inclusion in recent decades of a number of medicinal plants in the category of plants prohibited for collection by the Ministry of Natural Resources (plants included in the Red Data Books of the Russian Federation and its constituent entities) and the Ministry of Internal Affairs (especially valuable plants, and drug-containing plant materials).

To mitigate these risks, a thorough understanding of botany and plant ecology is necessary, along with a comprehension of proper harvesting and processing techniques. When approached correctly, the self-collection and cultivation of medicinal plant raw materials can become an integral component of health-promoting practices and contribute to the development of personal potential, physical activity, and social integration.

Therefore, while the transition to biotechnologically-produced phytopharmaceuticals reflects the pharmaceutical industry's pursuit of sustainable development and safety, the preservation and advancement of traditional knowledge regarding medicinal plants remains a crucial aspect necessitating careful and responsible consideration.

Nevertheless, the self-directed process of searching for, collecting, cultivating, and studying medicinal plant raw materials constitutes a significant health-promoting

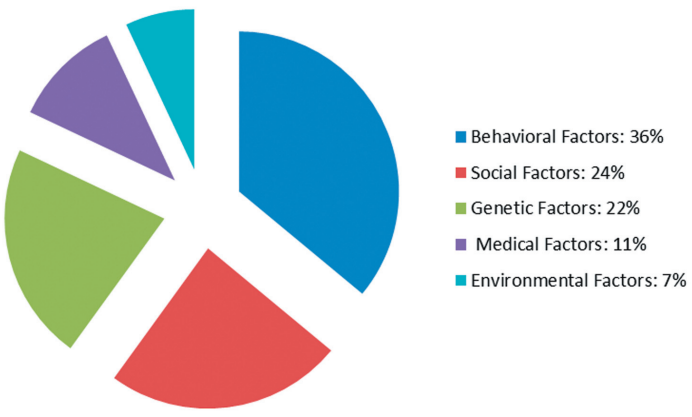

Fig. 1. Correlation of the influence of behavioral determinants (lifestyle) and medical factors on human health
Рис. 1. Соотношение влияния поведенческих детерминант (образа жизни) и медицинских факторов на здоровье человека

Table 1.

Comparison of traditional harvesting of wild plants and biotechnological cultivation of phytopreparations

Табл. 1.

Сравнение традиционного сбора дикорастущих растений и биотехнологического выращивания фитопрепаратов

No.	Criterion	Traditional collection	Biotechnological production
1	Quality control	Low	High
2	Stability of BAS content	Unstable	Standardized
3	Environmental load	High	Minimal
4	Health risks	High	Low
5	Scalability of production	Limited	Wide
6	Standardization dependence	High	Independent
7	Biodiversity conservation	Limited	High
8	Biodiversity conservation	Can negatively affect	Natural resources

practice. It contributes to health enhancement through several mechanisms: the imperative to acquire and process new information concerning plants and their biological attributes, engagement within a community of like-minded individuals, which fosters social interaction, and regular excursions into natural environments, thereby stimulating physical activity in the open air.

Notwithstanding the inherent risks (Table 1), with appropriate methodology and adequate knowledge, the self-procurement of medicinal raw materials of plant origin has the potential to become an efficacious and beneficial component of a healthy lifestyle. Furthermore, the aforementioned risks are mitigated: on one hand, the study of botany and the biological attributes of plants enables more precise identification of species, optimal harvesting locales, and appropriate collection or cultivation periods; and on the other hand, it fosters the development of personal potential and expands participation in societal life.

A compelling model of collaborative engagement among scientific institutions (V. L. Komarov Botanical Institute of the Russian Academy of Sciences, Saint Petersburg State University), public organizations (the Russian Geographical Society, the "Koster" magazine for schoolchildren), and municipal administration has been cultivated within the realm of ecological education and specialized botanical skills training, encompassing proficiency in medicinal plant identification. This model is exemplified by the All-Russian Children's Ecological Expedition "Living Water," convened annually since 1989. Children, parents, educators, and researchers from specialized scientific institutions establish an ecological encampment near a significant natural site for a fortnight. Under the guidance of experts, they conduct ethnographic, hydrological, botanical, and zoological investigations. The culmination of the expedition is a comprehensive assessment of the studied territory, disseminated in a collection of reports and discussed at a scientific conference held at the Russian Geographical Society (in recent years, the Russian Botanical Society) [10].

Consequently, the self-directed process of obtaining medicinal raw materials of plant origin should be encouraged as a health-promoting technology and a form of avocation. Within this context, "medicinal raw materials of plant origin" refers to those types of materials specified in two sections of the State Pharmacopoeia of the Russian Federation:

- 2.4. Pharmaceutical Substances of Plant Origin;
- 2.5. Medicinal Plant Raw Materials.

Furthermore, in addition to plants, this also encompasses the Chaga mushroom and apicultural products, namely honey, propolis, and royal jelly [11].

Article 35 of the Forest Code of the Russian Federation (FC RF) No. 200-FZ of December 4, 2006 (as amended on December 26, 2024) governs the harvesting of edible forest resources and the collection of medicinal plants by citizens for their own needs. It emphasizes that such activities are conducted in accordance with general forest management regulations (Article 11 of the FC RF) and may be restricted in accordance with environmental and other norms (Article 27 of the FC RF). Furthermore, certain restrictions applicable to commercial harvesting do not apply to citizens collecting raw materials for personal use. Moreover, the procedure for such activities is regulated by the laws of the constituent entities of the Russian Federation, which allows for consideration of regional specificities and the ecological situation.

This legislative framework underscores the importance of balancing the right of citizens to utilize natural resources with the imperative of environmental protection.

Within this context, the inclination of citizens to collect medicinal raw materials in the wild, cultivate them in culture, or propagate them for personal consumption can be viewed not only as an avocation but also as a manifestation of responsible resource management that contributes to health enhancement and the development of ecological consciousness.

In conclusion, the concept of "obtaining medicinal raw materials of plant origin" extends beyond mere collection: it constitutes a comprehensive set of activities encompassing ecologically sound resource utilization, the advancement of knowledge regarding plants, the maintenance of physical activity, and social interaction. Furthermore, such endeavors should be encouraged and developed within the framework of existing legislation to ensure the preservation of natural biodiversity and public health.

REFERENCES

1. Social determinants of health / [Elektronnyi resurs] // World Health Organization: [sait]. – URL: http://www.who.int/hia/evidence/doh/en (data obrashcheniya: 05.06.2025).

2. Bridget C. Booske, Jessica K. Athens, David A. Kindig, Hyojun Park, Patrick L. County health rankings working pape. Different perspectives for assigning weights to determinants of health// Remington FEBRUARY2010 p. 22.

3. Parfenov V. A. Prevention of Alzheimer's disease // Neurology, neuropsychiatry, psychosomatics. 2011. No. 3. P. 8–13 URL: https://cyberleninka.ru/article/n/profilaktika-bolezni-altsgeymera (date of access: 03/27/2025). doi: 10.14412/2074-2711-2011-159. (In Russ.).

4. Mungalov V. N., Bukhtoyarova A. A. Distribution of human activity and professional burnout // Baikal Research Journal. 2024. No. 1. P. 236–247. doi: 10.17150/2411-6262.2024.15(1).236-247. (In Russ.).

5. Galkin K. A. Features of the sociological consideration of aging and old age (research review). Humanities. Bulletin of the Financial University. 2024; 14(4):108–117. doi: 10.26794/2226-7867-2024-14-4-108-117. (In Russ.).

6. Berezina T. N., Chumakova E. A. – Psychological risks of developing socially significant diseases in retirement age. // Psychologist. – 2019. – No. 3. doi: 10.25136/2409-8701.2019.3.29985. (In Russ.).

7. Selimzyanova L. R., Vishneva E. A., Fedoseenko M. V., Promyslova E. A. Phytotherapy: current state of the issue. Pediatric Pharmacology. 2016; 13 (5): 488–493. doi: 10.15690/pf.v13i5.1645. (In Russ.).

8. Khotim E. N., Zhigaltsov A. M., Appadu Kumara Some aspects of modern herbal medicine // Journal of GrSMU. 2016. No. 3 (55). P. 136–140 URL: https://cyberleninka.ru/article/n/nekotorye-aspekty-sovremennoy-fitoterapii. (In Russ.).

9. Paramonov S. G. Aspects of contamination of medicinal plants with pesticides // Pharmacy formulas. – 2021. – Vol. 3, No. 2. – P. 78–81. doi: 10.17816/phf71365. (In Russ.).

10. Kharlampiev N.B. Vserossiiskaya detskaya ekologicheskaya ekspeditsiya "Zhivaya voda" i prirodovedcheskie traditsii zhurnala "Koster" // Materialy issledovanii Vserossiiskoi detskoi ekologicheskoi ekspeditsii "Zhivaya voda – 2001". SPb.: Izd-vo SPKhFA, 2001. P. 5–10. (In Russ.).

11. Natural sources of medicinal plant materials and medicinal substances of plant origin. Certificate of state registration of the database No. 2025621134 Paramonov S. G., Gryazkin A. V., Voldayev L. K. Date of state registration in the Database Register 13.03.2025. (In Russ.).

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Сбор и выращивание лекарственных растений в роли здоровьесберегающей практики и формы ответственного природопользования

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АННОТАЦИЯ. В статье рассматривается актуальная проблема самостоятельного сбора лекарственных растений как формы хобби, обладающей значительным потенциалом для укрепления здоровья и формирования экологической культуры. Анализируются современные научные публикации, подчёркивающие необходимость ответственного и информированного подхода к данной практике, основанного на знаниях ботаники и экологии, поддержке сообществ единомышленников и законодательном регулировании. Отмечается, что только комплексное сочетание образовательных мероприятий, социального взаимодействия и правового контроля позволяет обеспечить безопасность использования лекарственного растительного сырья, сохранить биоразнообразие и минимизировать риски для здоровья человека. В статье обсуждаются преимущества и потенциальные опасности самостоятельного сбора лекарственных растений, что делает его важным вкладом в развитие здоровьесберегающих технологий и устойчивого природопользования.

КЛЮЧЕВЫЕ СЛОВА: сбор лекарственных трав; лекарственное сырье растительного происхождения; фитотерапия; здоровый образ жизни; здоровьесберегающие практики

СПИСОК ИСТОЧНИКОВ

1. Social determinants of health / [Электронный ресурс] // World Health Organization: [сайт]. – URL: http://www.who.int/hia/evidence/doh/en (дата обращения: 15.05.2025).

2. Bridget C. Booske, Jessica K. Athens, David A. Kindig, Hyojun Park, Patrick L. County health rankings working pape. Different perspectives for assigning weights to determinants of health// Remington FEBRUARY2010 p. 22.

3. Парфенов В. А. Профилактика болезни Альцгеймера // Неврология, нейропсихиатрия, психосоматика. 2011. № 3. С. 8–13 URL: https://cyberleninka.ru/article/n/profilaktika-bolezni-altsgeymera (дата обращения: 27.03.2025). doi: 10.14412/2074-2711-2011-159

4. Мунгалов В. Н., Бухтоярова А. А. Распределение активности человека и профессиональное выгорание // Baikal Research Journal. 2024. № 1. С. 236–247. doi: 10.17150/2411-6262.2024.15(1).236-247

5. Галкин К. А. Особенности социологического рассмотрения старения и пожилого возраста (обзор исследований). Гуманитарные науки. Вестник Финансового университета. 2024;14(4):108–117. doi: 10.26794/2226-7867-2024-14-4-108-117

6. Березина Т. Н., Чумакова Е. А. – Психологические риски развития социально значимых заболеваний в пенсионном возрасте. // Психолог. – 2019. – № 3. doi: 10.25136/2409-8701.2019.3.29985

7. Селимзянова Л. Р., Вишнёва Е. А., Федосеенко М. В., Промыслова Е. А. Фитотерапия: современное состояние вопроса. Педиатрическая фармакология. 2016; 13 (5):488–493. doi: 10.15690/pf.v13i5.1645

8. Хотим Е. Н., Жигальцов А. М., Аппаду Кумара Некоторые аспекты современной фитотерапии // Журнал ГрГМУ. 2016. № 3 (55). С. 136–140 URL: https://cyberleninka.ru/article/n/nekotorye-aspekty-sovremennoy-fitoterapii (дата обращения: 27.03.2025).

9. Парамонов С. Г. Аспекты загрязнения лекарственных растений пестицидами // Формулы фармации. – 2021. – Т. 3, № 2. – С. 78–81. doi: 10.17816/phf71365

10. Харлампиев Н.Б. Всероссийская детская экологическая экспедиция «Живая вода» и природоведческие традиции журнала «Костер» // Материалы исследований Всероссийской детской экологической экспедиции «Живая вода – 2001». СПб.: Изд-во СПХФА, 2001. С. 5–10.

11. Природные источники лекарственного растительного сырья и лекарственных субстанций растительного происхождения. Свидетельство о государственной регистрации базы данных № 2025621134. Парамонов С. Г., Грязькин А. В., Волдаев Л. К. Дата государственной регистрации в Реестре баз данных 13.03.2025.

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