

The Modern State and Historical Aspects of Homeopathy as a Scientific and Educational Discipline in Ukraine

Gaidukova Olena O.^{1*}, Oliinyk S. V.², Nikolenko E. Y.¹, Vovk K. V.¹, Vlasenko O. O.¹

¹. Department of General Practice – Family Medicine, School of Medicine, V. N. Karazin Kharkiv National University, Kharkiv, Ukraine.

². Department of Technology of Drugs, National University of Pharmacy, Kharkiv, Ukraine.

***Corresponding Author: Gaidukova Olena O**

Abstract

The problem-targeted analysis of the modern homeopathy structure is carried out. The state of the modern regulatory and legal framework concerning regulation of the homeopathic method of treatment as the basis of the legal mechanism in state management of this branch is analyzed. The historical aspects of homeopathy are generalized, the analysis of homeopathic doctors' activity legal regulation in Ukraine is carried out, and also issues of their education are covered. The results of scientific achievements are presented and their role in the formation of the evidence base for the homeopathic method of treatment is outlined. The problems of homeopathic medicine, pharmacy and science are covered.

Keywords: Homeopathy, Data of scientific literature, Legal regulation, Homeopaths, Pharmacological studies.

Introduction

Prerequisites for development and implementation of homeopathy in the world go back to the millenary past. As a matter of fact, this is the oldest medicine known to mankind. For centuries, medicine has been largely based on natural substances and a holistic approach to humans. This experience was collected, enriched, and its most valuable part was used in scientific medicine.

All peoples have their own traditional methods of treatment, which have been selected for centuries and carefully preserved in the memory of generations. It is the historical roots of folk medicine that gave rise to official medicine, which was based on experiment and materialist philosophy [1, 2].

Development of homeopathy around the world has gone through stages of prosperity and decline. And, despite the opposition of official medicine, homeopathy is gradually extending its sphere of influence. In 2019, the global homeopathy market amounted 15,170 million US dollars, and it is expected to reach 26,630 million US dollars by the end of 2026,

with an average annual growth rate of 8.3% over 2021-2026 [3].

According to the WHO, in Australia, Europe and North America, in parallel with allopathic medicine, alternative medicine, part of which is homeopathy, is increasingly used. Homeopathic medicinal products (HomMP) are used in India by 50% of doctors, 40% - in the UK, 32% - in France, 25% - in Germany, 22% - in Austria [4]. Homeopathic prescriber per 100,000 inhabitants is shown in the Fig. 1 [5].

Compulsory medical insurance (CMI) policies to varying extent reimburse the cost of therapeutic alternatives in such countries as the United Kingdom, France, Germany, Switzerland, and Luxembourg, thus maintaining a stable demand for homeopathy.

In Austria and Belgium, it is believed that the efficiency and efficacy of homeopathy have not been proven; therefore, the CMI does not reimburse the cost of therapeutic alternatives [6].

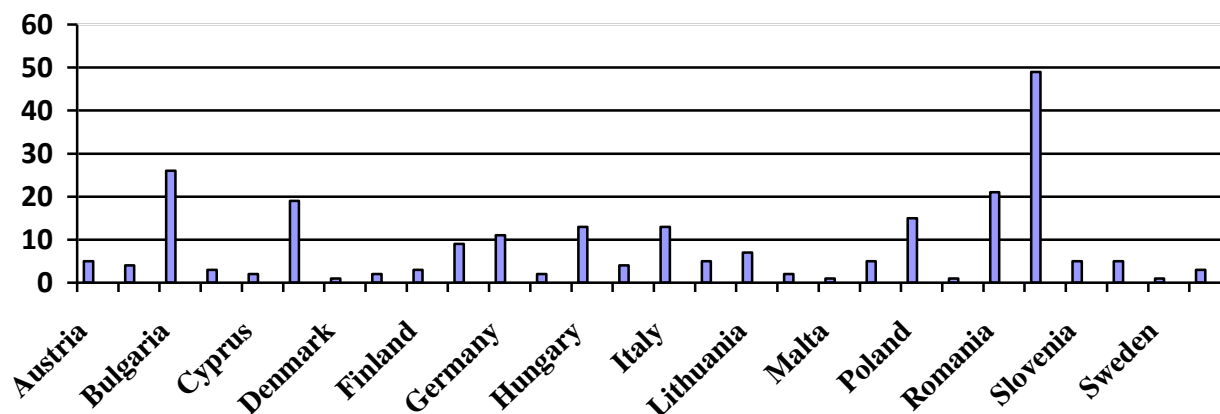


Fig. 1: Homeopathic prescribers per 100,000 inhabitants (2018). The mean of 8.4 doctors per 100,000 EU residents prescribe HomMP to their patients

Today, HomMP production is carried out in many countries around the world. The nomenclature of homeopathic companies includes 5,000 - 10,000 classic homeopathic mono-preparations. The main suppliers of HomMP are Boiron Group, Biologische Heilmittel Heel GmbH, A Nelson & Co Ltd, GMP Laboratories of America, Inc., Standard Homeopathic Company (Hyland's, Inc.), Washington Homeopathic Products, Inc., Homeocan inc., Hahnemann Laboratories, Inc., Mediral International Inc., Ainsworths Ltd. etc. However, it should be noted that

these are pharmacies which remain the main channels for the HomMP sale [3, 5]. According to foreign literature, HomMP amount to 20% in the formulation of pharmacies. Thus, HomMP become an economic category of the pharmacy products assortment [4]. Modern homeopathy is a holistic scientific system based on an inseparable set of principles and structurally consists of the theoretical part (theoretical foundations of modern homeopathic medicine and theoretical foundations of modern homeopathic pharmacy) and applied methods based on it (fig. 2) [7, 8].

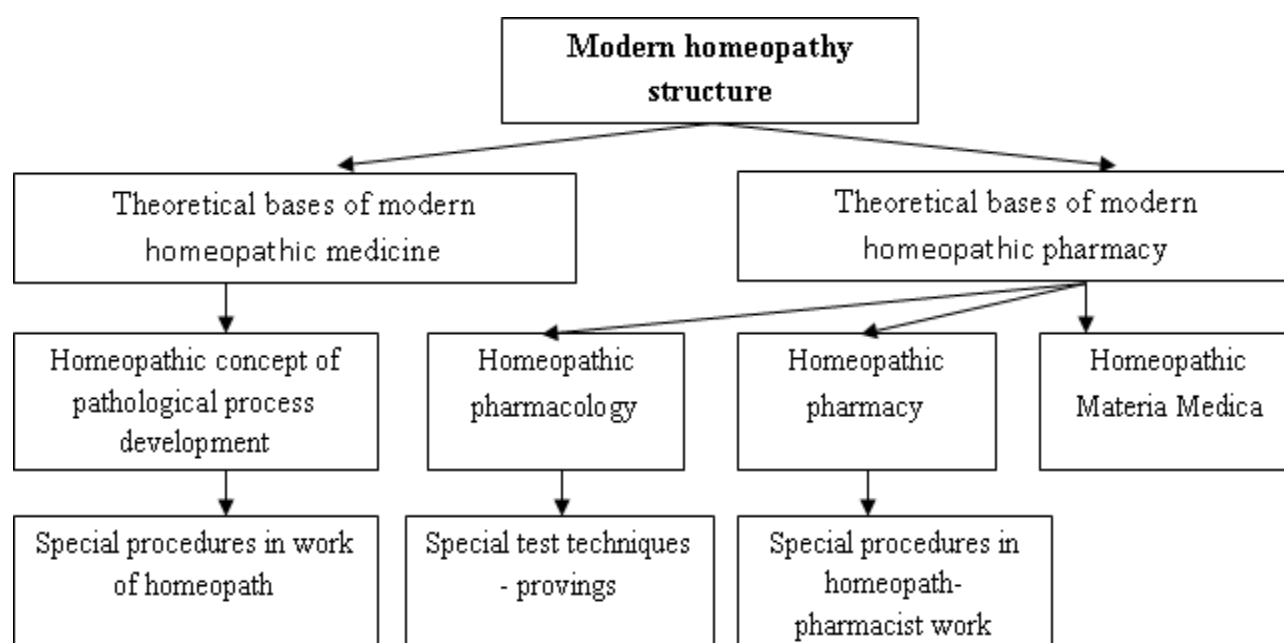


Fig. 2: Modern homeopathy structure

Homeopathic pharmacology studies the set of changes that occur in the human body due to the action of a dynamicized substance.

Separate fields of homeopathic pharmacology include:

- Study of the dynamicized substance effect on the body in a virtually healthy person (proving).
- Study of the dynamized substance effect on a diseased person's body:
 - a) In cases of correct or incorrect choice of drug;
 - b) In cases of correct or incorrect choice of potency;
 - c) In cases of high-quality or low-quality manufactured drug (Fig. 3) [7].

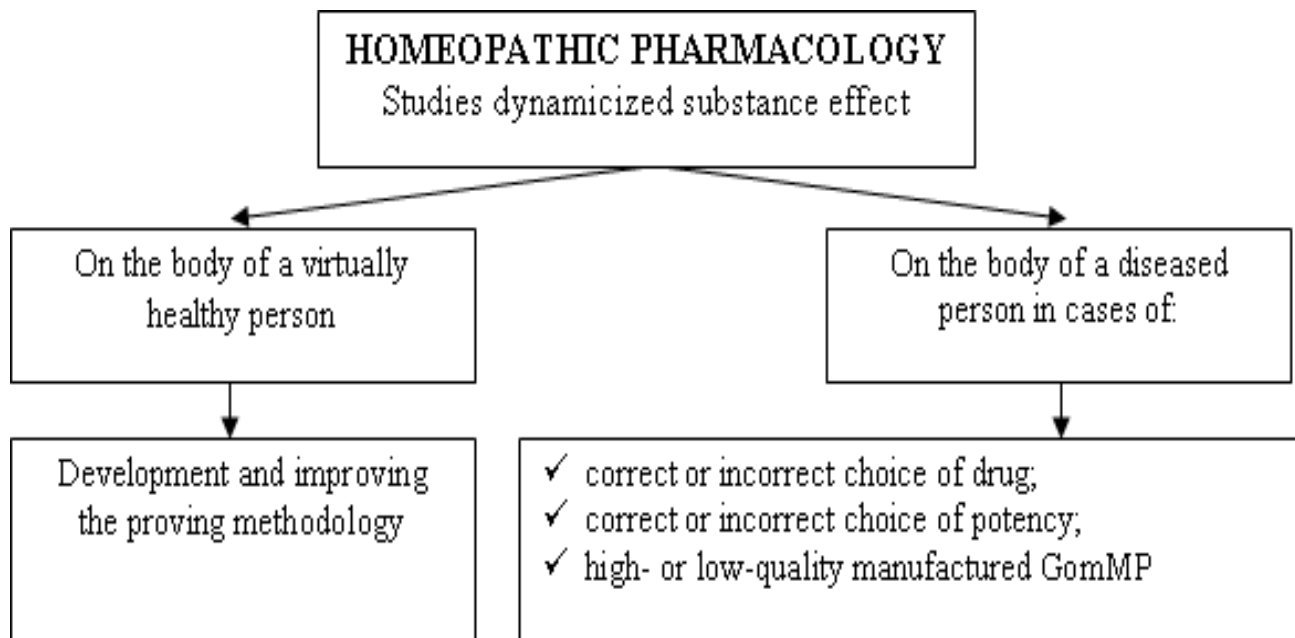


Fig. 3: Fields of homeopathic pharmacology

Homeopathic pharmacy studies methods of various dosage forms preparation according to the method that was developed and described by S. Hahnemann. S. Hahnemann called his method of drug preparation dynamization, and the obtained dilutions - potencies. The same section includes the

study and standardization of the homeopathy raw material base, study of various modifications in potentiation technology, study of technology of monocomponent and complex homeopathic medicines in pharmaceutical and industrial production, features of standardization and quality control in homeopathy (Fig. 4) [7].

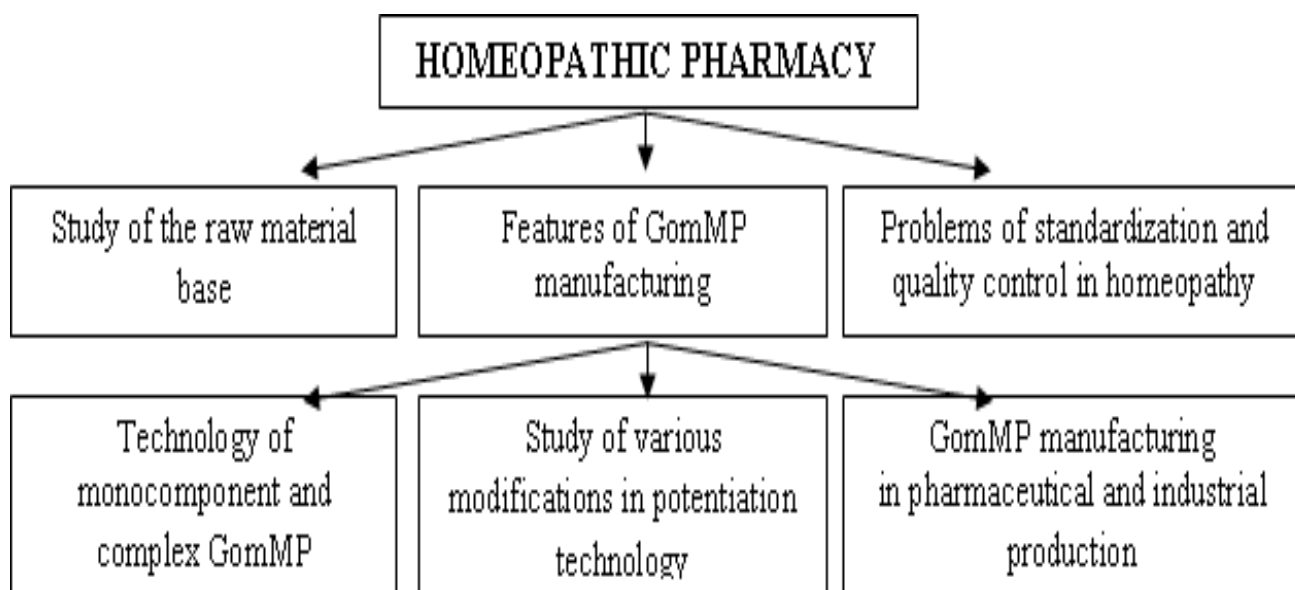


Fig. 4: Fields of homeopathic pharmacy

Homeopathic Matter Medica includes a set of knowledge about the action of homeopathic drugs and is a detailed collection of symptoms which a particular drug can either cause in the body of a virtually healthy person, or eliminate in a sick body. The first reference book of this kind is “Materia Medica pura” by S. Hahnemann. Today, Materia Medica reference books are divided into:

- Analytical (Berike W. “Materia Medica homeopathic remedies”, Boger S. “Original Materia Medica K. von Benninghausen”);
- Synoptic (Vermeulen F. “Synoptic Materia Medica”);
- Synthetic (Farrington EA “Homeopathic clinical pharmacology”, Hughes R. “Guide to homeopathic pharmacodynamics”);
- Educational (Burt V. “Physiological Materia Medica”, Sharett J. “Practical homeopathic pharmacology”) [6].

The possibility of such systematization confirms a fairly thorough study of homeopathic medicines at present.

Homeopathy in Ukraine: Development History

Homeopathy in Ukraine has been widely developed since the 1920s. The homeopathic method has quickly become popular, homeopathic offices and hospitals have been opened, homeopathic books and journals have been published. A great achievement of homeopaths was successful use of the homeopathic method in the treatment of patients during the pandemics of the XIX century: cholera, typhoid fever, diphtheria.

It has been proven that the homeopathic method is not only inferior to traditional remedies for these infectious diseases, but often surpasses them in efficacy. The first homeopathic pharmacy in Kyiv was founded in 1835 and in Kharkiv in 1894. Societies of homeopathy followers were established. Homeopaths of Ukraine published their works in the journal “Bulletin of Homeopathic Medicine” (edited by V. Dyukov), which started coming out in 1900 and was published in Kharkiv and Odessa. In 1935, T. M. Lypnytsky published his work “Homeopathy”, where he presented his assessment of the homeopathic therapy essentials. N. M. Vavilova in 1962 published

her book “Homeopathic pharmacodynamics”, which discusses the effects of minerals on the body and their treatment.

In this work, she was the first to express the idea of “informational effect” of drugs in small doses on the body. D. V. Popov, the founder of the Kyiv School, made a great contribution to the development of homeopathy. For 50 years of his homeopathic practice D. V. Popov has been studying the dependence of the therapeutic effect on the dilution ratio. He believed that high dilutions, which have more degrees of potentiation, have a more fundamental and profound effect than low ones, especially in severe pathologies.

Since the mid-1960s, homeopathic activity in Ukraine has become semi-legal: societies of homeopathic doctors have been liquidated, publication of homeopathic literature has been stopped, and the number of homeopathic medicines has been reduced. In 1966, only 3 homeopaths worked in the homeopathic polyclinic in Kharkiv [9-14].

Since 1989, the problem of official recognition of the homeopathic method of treatment has been solved in Ukraine thanks to the order of the Ministry of Health of Ukraine No. 165 dated 03.08.1989 “On the development of the homeopathic method in medical practice and improving the homeopathic medicines provision”. The collection “Nomenclature of homeopathic medicines” prepared by T. D. Popova and N. D. Moskalenko (1989-1992 pp.), is a supplement to the above order [9].

In 1989, the All-Union Homeopathic Association was established at the first congress of homeopaths in Kyiv. In 1997, Ukraine was admitted to the International League, and N. Ye. Kostynska was elected the Vice-President of the League in Ukraine. In 1991, a specialized reception was organized in Kharkiv by homeopaths - a therapist, pediatrician, surgeon, and gynecologist.

The Kharkiv Homeopathic Society was established. “Arnika” Co, established in 1991 in Kharkiv, was one of the first in Ukraine to develop regulatory and technical documentation for complex HomMP, their licensing, registration and production on an industrial scale (6 drugs were registered). Since 1992, homeopathy (elective course) has been taught at the Odesa Medical Institute.

At the same time, pharmacy No. 271 was opened in Odesa, around which homeopathic doctors were consolidating, and by 1994 the library of homeopathic dilutions already had about 300 medicines.

Homeopaths of Ukraine publish their works in Russian and Ukrainian journals: “Journal of Homeopathic Treatment”, “Homeopathic Bulletin”, “Homeopath”, “Homeopathic Review” and “Bulletin of Homeopathic Medicine” (since January 1900). Currently, homeopathy is experiencing a rebirth.

Thus, in almost all regions of Ukraine there are specialized homeopathic pharmacies (there are over 30 of them) and departments in which HomMP are prepared and dispensed to the population. Ukraine takes an active part in International homeopathic organizations. Kharkiv Homeopathic Society, which has resumed its work since 1985, unites more than 300 members - doctors, pharmacists, scientists. There are specialized homeopathic clinics and offices, where the reception is carried out by experienced homeopaths (about 100), and more than 5,000 doctors of various specialties use homeopathic treatment in their work.

Homeopathic societies and associations exist in many cities of Ukraine [9-14]. At present, according to the Law of Ukraine “On Medicinal Products”, HomMP have the status of medicinal products and are included into the Register as a separate pharmacotherapeutic group. HomMP are registered in the Pharmacological Committee at the Ministry of Health of Ukraine and undergo clinical trials; scientific experimental and clinical studies of HomMP are carried out according to the international standards.

Homeopathy in Ukraine: Pharmaceutical market of HomMP

Currently, 228 HomMP are registered in Ukraine. However, the share of HomMP in the range of medicines in pharmacies is generally insignificant. The reason for this is the lack of a methodical approach to the formation of the range, insufficient assessment of the therapeutic and especially economic significance of HomMP. Analysis of the data obtained from the State Register of Medicines of Ukraine for 2010-2019 is shown in Fig. 5 [15].

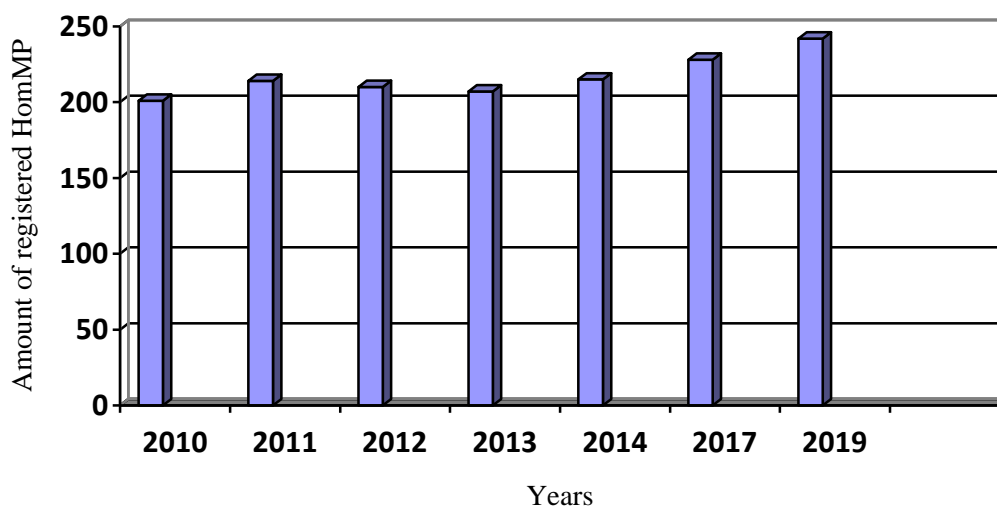


Fig. 5: Indices of registered HomMP in 2010-2019 in Ukraine: in 2010 201 HomMP were registered; in 2011 - 214; in 2012 - 210; in 2013 - 207; in 2014 - 215; in 2017 - 228; 2019 - 242 HomMP

There is a tendency to increase the number of registered (re-registered) HomMP in Ukraine. To date, their share in the total number of registered drugs is 1.8%. The pharmaceutical market of HomMP in Ukraine is represented by complex (87%) and monocomponent (13%) drugs. That is, the domestic market is dominated by foreign-made drugs.

Well-known companies “Biologische Heilmittel Heel GmbH” (Germany), Richard Bittner AG (Austria), Deutsche Homoeopathie-Union DHU-Arzneimittel GmbH & Co. KG.(Germany) and others are the status leaders among the manufacturing suppliers of finished HomMP. The top 10 countries-manufacturers of finished HomMP are shown in Fig. 6.

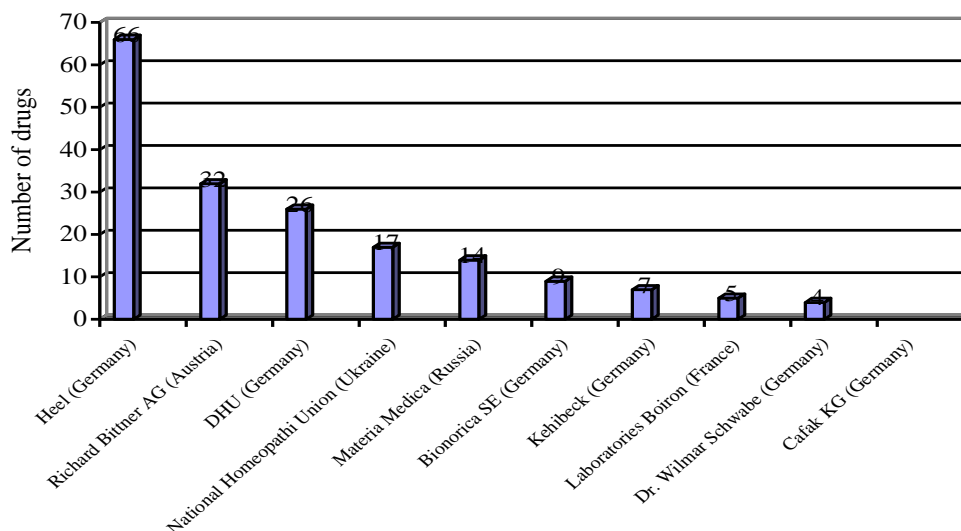


Fig. 6: Top 10 countries-manufacturers of finished HomMP, whose drugs are presented in the domestic pharmaceutical market

Segmentation of the HomMP pharmaceutical market in Ukraine by manufacturing firms showed that the share of foreign firms makes 86.0%, and that of domestic ones - 14.0%. The range of domestic production HomMP is presented by HomMP of seven firms:

ZAT “National Homeopathic Union” (50.0%), PAT “Biolik” (13.2%), PrAT “National Homeopathic Union” (10.0%), ZAT “Liktravy”, TOV “Arnika”, TOV “Homeopathic Pharmacy”, TOV “Factory of herbal medicines “Natural Medicines”” (6.7% each). Among foreign manufacturers in the pharmaceutical market of Ukraine the leading position is occupied by German companies - 63.1%, Austria - 17.7% and the Russian Federation - 8.1% [4, 15-16].

The share of HomMP in the range of pharmaceutical organizations' medicines is still insignificant, which is explained by the lack of a methodical approach to the range formation, the insufficient level of information support for consumers. In addition, an important circumstance is the state regulation on development and standardization of new HomMP and substances for their manufacture. Thus, creation of domestic HomMP, which would meet international standards, and their implementation into industrial production is an urgent task of modern pharmacy.

Homeopathy in Ukraine: Education

Both in developed European countries, and in Ukraine, the use of homeopathic therapy is the exclusive competence of certified

physicians (specialists with higher medical education). In fact, by order No. 165 of August 3, 1989, the Ministry of Health of Ukraine took the educational program for training pharmacists and physicians on the basics of homeopathy under the state control. Different qualification requirements are established for doctors of folk and nonconventional medicine (FNM) in different qualification categories.

Thus, common for doctors of all categories is: the presence of a complete higher education (specialist, master) in the field of “Medicine”, specialization in internship on one of the specialties “Medical Care” with the subsequent specialization in “Folk and Alternative Medicine”. Higher categories require more work experience and advanced training (postgraduate medical school, internship, physician's evaluation training, etc.). Since 1991, in several educational institutions of Ukraine, homeopathic centers, medical colleges have been established and training divisions in homeopathy and homeopathic pharmacy have been implemented. Training in Ukraine is carried out in three main areas [18-19]:

- Retraining courses for specialists - established for specialists with basic medical and pharmaceutical education in the main areas: homeopathic therapy, HomMP technology, quality control of homeopathic medicines, organization and economics of pharmacy, management and marketing.

- Elective courses (optional for students) in homeopathy and homeopathic pharmacy, where students gain a set of knowledge about the features of prescription and rational use of homeopathic medicines, the principles of manufacturing certain groups of homeopathic medicines - basic drugs, homeopathic dilutions, various dosage forms. Also, considerable attention is paid to the features of homeopathic medicines quality control, marketing, management, the specifics of HomMP provision and monitoring, information support of practice, etc.
- Cycles of specialization in homeopathy and homeopathic pharmacy - offered for 5th year students (in educational institutions of III-IV levels of accreditation) and the 2nd year students (in educational institutions of I-II levels of accreditation). The specialization program provides in-depth theoretical training of students in the main fields of homeopathic pharmacy and therapy, as well as practice at specialized homeopathic clinical and pharmaceutical institutions.

At the postgraduate level, in accordance with the order of the Ministry of Health of Ukraine, a postgraduate medical school of thematic improvement in homeopathy for doctors and pharmacists has been working at the P.L. Shupyk National Medical Academy of Postgraduate Education since 1989. It became the first state postgraduate medical school in academic homeopathy in Ukraine and Eastern Europe.

A significant number of doctors in Ukraine are trained in courses and seminars on homeopathy in state medical schools of various levels of accreditation and private medical institutions, which are licensed in accordance with current legislation of Ukraine.

Training of a homeopathic physician or postgraduate training of specialists in various specialties in academic homeopathy, both in Europe and the world, and in Ukraine, is carried out in accordance with approved state postgraduate training programs and includes 156 - 600 academic hours, which meets the approved requirements for EU countries [20]. For more than 10 years, an optional course in homeopathy has been taught for students of the Bogomolets National Medical University.

Specialists are also trained by the Dnipropetrovsk Medical Institute of Traditional and Alternative Medicine. At the undergraduate level, students of Kyiv Medical University at the Ukrainian Academy of Medical Sciences have been training in homeopathy, phytotherapy, reflexotherapy, and manual therapy for more than 10 years.

At Danylo Halytsky Lviv National Medical University at the Department of Rehabilitation and Alternative Medicine the basics of homeopathy are taught [21]. Specialists are trained at the National

University of Pharmacy, where graduates have the opportunity to gain theoretical knowledge about homeopathic treatment and can learn in practice how to make and control the quality of various homeopathic dosage forms. In 1995 at the Department of Pharmaceutical Technology of Medicines at the National University of Pharmacy under the guidance of Doctor of Pharmacy, Prof. O. I. Tikhonov, the specialization "Technology of homeopathic medicines" became available to train pharmacists-homeopaths, the specialization existed until 2007. Since 2007 up to 2010, students were taught the discipline of choice "Technology of homeopathic medicines".

Since 2010 up to now, the discipline "Technology of homeopathic medicines" is included into the program of training masters of pharmacy at the full-time, evening and correspondence department [22]. At the Department of Family Medicine, Folk and Alternative Medicine, Sanology of the Kharkiv Medical Academy of Postgraduate Education, homeopathy is taught academically, in full compliance with the requirements of the department activity.

Teaching of homeopathy is carried out mainly based on the FNM specialization curriculum, which is designed for doctors of medical care [7]. In Kyiv, for over 150 years, there has existed a well-known school of the Popov family including three generations of homeopaths, which has trained hundreds of practicing homeopaths in Ukraine and abroad [9-10].

Thus, according to world experience, the integration of homeopathy into the system of training a general practitioner and a family doctor at the undergraduate and

postgraduate levels is especially expedient and promising. Surveys were carried out in 24 universities of Ukraine having medical faculties. According to the survey, FNM courses exist in 40% of medical universities, 72% at the Faculty of Medicine and Biology and 8% at other faculties. Teaching is carried out in 20 fields of alternative medicine, including homeopathy.

Many faculties are carrying out research in these fields. Unfortunately, Ukraine has not yet developed the culture of widespread homeopathic therapy use, due to the lack of relevant knowledge in the population, a rather long period of official opposition to homeopathy, insufficient volume and level of teaching homeopathy in medical universities.

The existing commercial centers that teach homeopathy are often unable to issue state diplomas due to the non-compliance of training centers with the requirements of state accreditation, even at the minimum level. The situation is aggravated by the lack of professional requirements in our country for such specialists as “homeopathic physician” and “pharmacist-homeopath”.

Homeopathy in Ukraine: Legal regulation

In Ukraine, homeopathic medicine coexists with official medicine, as evidenced by Article 741 of Law No. 2801-XII (Annex B.3). Homeopathy is part of FNM.

The Decree of the President of Ukraine dated July 31, 1998 No. 823/98 “On Measures to Regulate Activities in the Field of Folk and Alternative Medicine” (Annex B.4) also supports interaction of official medicine with the FNM.

In our country, FNM is now regulated by the basic regulations on medical activities in this field [18, 22]:

Orders of the Ministry of Health:

- Dated 23.09.2013 No. 822 “On the procedure for issuing an attestation-expert opinion confirming that a person has healing abilities” and registered with the Ministry of Justice of Ukraine on 13.11.2013 under No. 1943/24475 (Appendix B.5);
- Dated March 16, 2016 No. 189 “On the organization of work of self-employed

person engaged in folk medicine (healing)” (Appendix B.6);

- dated August 23, 2002 No. 324 “On Approval of the Procedure for Determining Institutions to Exercise Certification and Examination in the Field of Traditional and Alternative Medicine” (Appendix B.7);
- Dated 15.06.2001 No. 234 “On the results of scientific activity of institutions (establishments) subordinated to the Ministry of Health of Ukraine in the field of folk and alternative medicine” (Appendix B.8);
- Dated 28.10.2002 No. 385 “Regarding the approval of the list of medical positions in health care institutions registered in the Ministry of Justice of Ukraine on 12.11.2002 under No. 893/7181” (concerning the position of a FNM doctor in the specialty of FNM) (Annex B.9);
- Dated 19.06.2003 No. 267 “On control over the implementation of illegal medical activities in the field of folk and alternative medicine” (Annex B.10).

In Ukraine, the homeopathic branch is regulated by the following legal acts [8, 18, 22]:

- Law of Ukraine “On Medicinal Products” No. 124/96-BP dated 04.04.1996 (as amended and supplemented in accordance with the Law of Ukraine No. 5038-VI of 04.07.2012);
- Resolution of the Cabinet of Ministers of Ukraine No. 770 dated 06.05.2000;
- Order of the Ministry of Health of the USSR No. 165 dated 03.08.1989 “On the development of homeopathic treatment in medical practice and improving providing of the population with homeopathic remedies”;
- Order of the Ministry of Health of Ukraine No. 152 dated 18.08.1995 “On approval of the Procedure for issuing a permit to use and implement into the production medicinal products”;
- Order of the Ministry of Health of Ukraine No. 360 dated 19.07.2005 “On approval of the Rules for issuing prescriptions and demand-orders for medicinal products and medical devices, the Procedure for release

of medicines and medical devices from pharmacies and their structural units, Instructions on storage, accounting and destruction of prescription forms and demand-orders“;

- Order of the Ministry of Health of Ukraine No. 426 dated 26.08.2005 “On approval of the Procedure for examination of registration materials for medicinal products sent for state registration (re-registration), as well as examination of materials on amendments to registration materials during the continuance of the registration certificate” (with amendments and additions made by the order of the Ministry of Health of Ukraine No. 698 of 1.10.2014);
- State Pharmacopoeia of Ukraine (First edition (Annexes 1, 3) and second edition).

Homeopathy in Ukraine: Science

In Ukraine, active research work in the field of homeopathy is going on. Leading universities are developing this research field. We will dwell in detail on the scientific school of the National University of Pharmacy (Kharkiv). Scientists under the guidance of Doctor of Pharmacy, Prof. Tikhonov O. I. and Doctor of Pharmacy, Prof. Tikhonova S. O. for more than 15 years have

carried out work in the research field “Design and development of homeopathic medicines” (state registration No. 0103U000480).

Research in homeopathic field is carried out at the student scientific society; diploma and master's works on development of HomMP structure and technology are carried out. 7 candidate dissertations were defended, 7 articles were developed for the State Pharmacopoeia of Ukraine and 11 patents were obtained [23]. In addition, 7 HomMP have been developed for treatment and prevention of various diseases.

The drug - homeopathic granules "Allergin-ARN" - was produced industrially (TOV “Arnika”, Kharkiv, Ukraine) for 15 years. On the basis of the National University of Pharmacy (Kharkiv) studies on the development of HomMP composition and technology and pharmacological studies on acute toxicity and specific activity are carried out. In each study, researchers used preclinical studies to demonstrate the safety and specific activity of new HomMP using the same generally accepted methods and techniques used for allopathic drugs. The results of preclinical studies of new HomMP, carried out on the basis of the Central Research Laboratory of NUPh, are summarized in Table. 1.

Table 1: Results of preclinical HomMP studies

No.	Name of medicinal product	Biological activity	Method of study	Results	References
1.	Apis mellifica (mother tincture, homeopathic dilutions X3, C3, C6, granules): Apis mellifica C6	Acute toxicity	“ <i>In vivo</i> ” (rats)	In intragastric administration refers to virtually non-toxic substances	[24]
		Lymphocytotoxicity	“ <i>In vitro</i> ” – test for donor blood lymphocytes.	Increasing the level of autoimmune antibodies compared to the control with addition of potencies X3 and C3. Potency C6 increases the viability of lymphocytes, which indicates its immunomodulatory properties.	
2.	“Api-gran” granules: Apis mellifica C6	Antiexudative effect	“ <i>In vivo</i> ” (rats) – model of traumatic foot injury	Has anti-inflammatory activity, affecting the exudative phase of inflammation	[25]
		Influence on skin capillaries reactivity	“ <i>In vivo</i> ” (rats) - Nuraliev Yu.N. and Mednik G.L. method	Significantly increases the permeability of capillaries	
		Influence on the state of cell membranes	“ <i>In vitro</i> ” - model of spontaneous erythrocytes hemolysis according to Jager	Does not cause hemolysis of erythrocytes	
		Influence on rheological	“ <i>In vivo</i> ” (frogs) - light microscopy on axial and parietal blood flow in the vessels of	Restores blood flow in blood vessels and has high and rapid bioavailability.	

		Properties of blood	the frog's tongue		
3.	"Allergin" granules: Urtica urens C6 Nerium oleander C6 Cyclamen europaeum C6 Allium cepa C6 Apis mellifica C6	Acute toxicity	" <i>In vivo</i> " (rats)	In intragastric administration refers to virtually non-toxic substances	[26]
		Antiallergic effect	" <i>In vivo</i> " (guinea pigs) – conjunctival test " <i>In vitro</i> " – test of indirect mastocytes degranulation	Has a pronounced antiallergic activity (comparison drug – Loratadine)	
4.	"Api-derma" unguentum: apitoxin MH propolis MH	Antiallergic and antiexudative activity	" <i>In vivo</i> " (rats) - model of paw inflammation induced by the 1% solution of eggwhite in complete Freund's adjunct (CFA)	Reduces swelling of the rat's paws	[27]
		Anti-inflammatory effect	" <i>In vivo</i> " (rats) - model of contact dermatitis induced by applications of 2,4-dinitrochlorobenzene	Pronounced anti-inflammatory effect (comparison drug – Irikar)	
5.	"Tonus-aktiv" granules: Arsenicum album C12 Lycopodium clavatum C12 Acidum phosphoricum C12 Echinacea angustifolia C6	Acute toxicity	" <i>In vivo</i> " (rats)	In intragastric administration refers to virtually non-toxic substances	[28]
		Stress-protective activity	" <i>In vivo</i> " (rats) - model of neuromuscular tension according to Selye	Moderate stress-protective activity (comparison drug – Stress Gran)	
		Influence on the CNS state	" <i>In vivo</i> " (rats) - integrated open field test	Practically does not affect the state of the CNS and has no sedative effect	
6.	"Surfotrit" granules: surfactant lyophilized powder C3	Acute toxicity	" <i>In vivo</i> " (rats)	In intragastric administration refers to virtually non-toxic substances	[29]
		Antiexudative effect	" <i>In vivo</i> " (rats) - model of the hematoepurial barrier's permeability impairment induced by intra-abdominal injection of 6% ammonium chloride solution	Pronounced anti-exudative effect (comparison drug – Indomethacin)	
7.	"Cyclorin" granules: Cyclamen europaeum D3	Acute toxicity	" <i>In vivo</i> " (rats)	In intragastric administration refers to virtually non-toxic substances	[30]
		Antiallergic effect	" <i>In vivo</i> " (guinea pigs) – model of allergic rhinitis " <i>In vitro</i> " – L.S. Ishimova's method based on the ability to stabilize smooth cell membranes.	Has a pronounced antiallergic activity, improves the nasal mucosa condition: reduces edema, secretion, redness (comparison drug - Rhinital)	

According to the results of the studies performed, it can be stated that preclinical studies in the new HomMP development can and should be carried out using the same methods as for allopathic drugs. They accelerate the integration between

homeopathy and allopathy, permit to find intersections and to unify research methods for these groups of drugs.

Conclusions

Homeopathic medicine and pharmacy in various forms exist in Ukraine, as in all countries of the world and are promoted by the WHO. It is part of FNM and has a long history. The legal mechanism of state regulation in the field of homeopathy in Ukraine needs to be improved. Particularly effective methods of homeopathic medicine and HomMP can be recommended in the standard treatment protocols of the Ministry of Health of Ukraine, as an additional or alternative treatment.

Teaching of homeopathic medicine in Ukraine has significantly improved in recent years, it is carried out at the state level according to the scientific and practical plans and programs approved by the Ministry of Health, but needs further expansion and improvement. Modern homeopathy is the only scientific system with a structured theoretical basis, and a significant number of special applied techniques have been carefully developed on its basis.

The formation of the evidence base of the homeopathic treatment method permits to accelerate the integration between homeopathy and allopathy, to find points of intersection and to unify the methods of studying these groups of drugs. Preclinical studies of HomMP can be carried out using the similar methods and techniques as for allopathic drugs. They permit to predict and to confirm the pharmacological activity of the developed HomMP.

References

1. Yevtushenko VV (2019) Folk medicine - as a component of traditional Ukrainian culture. Bulletin of the National Academy of Public Administration under the President of Ukraine, 3: 91-97. (in Ukrainian)
2. Yevtushenko VV (2016) Scientific concept of folk medicine development in Ukraine. Investments: practice and experience, 7: 137-42. (in Ukrainian)
3. Homeopathy Market (2020) Industry Size, Share, Global Analysis, Development Status, Regional Trends, Opportunity Assessment and Comprehensive Research Study Till 2026. Retrieved from <https://www.marketreportsworld.com/global-homeopathy-market-14570053>
4. Tolochko VM, Adonkina V Yu, Vakulenko DV, Music TF (2018) Comparative analysis of the assortment of homeopathic medicines on the pharmaceutical market of Ukraine, the Russian Federation, the republics of Belarus and Kazakhstan. Georgian Medical News, 7-8 (280-281): 178-83. (in Russian)
5. Homeopathic and Anthroposophic Medicinal Products in the EU-Spotlight on an Industry. ECHAMP; 2020. Retrieved from <https://echamp.eu/echamp-resources/echamp-brochures/200107-spotlight-on-an-industry.pdf>
6. WHO traditional medicine strategy: 2014-2023. Retrieved from http://apps.who.int/iris/bitstream/10665/92455/1/19789244506097_rus.pdf?ua=1.
7. Sergeyeva O Yu (2014) Interdisciplinary aspects of studying homeopathy in the structure of educational programs at the postgraduate stage. Problems of ecological and medical genetics and clinical immunology, 4: 251-60. (in Ukrainian)
8. Vishnevskaya LI, Polovko NP, Sergeyeva O Yu etc (2019) Distribution of homeopathic pharmacotherapy in the world and in Ukraine. VIII International Scientific and Practical Conference "Modern Advances in Pharmaceutical Technology and Biotechnology" (November 7-8, 2019). 123-32. (in Ukrainian)
9. History of homeopathy in Ukraine. Retrieved from <http://www.homeopat.org.ua/ru/category/history/>
10. The golden page of history (2018) Department of Phytotherapy, Homeopathy and Bioenergy Information Medicine - 25 years. Kyiv Medical University. Information publication. Kiev. 36. (in Ukrainian)
11. Kozymenko TN (2016) Homeopathy. Phytotherapy. Chasopys., 3: 75-83. (in Russian)
12. Bilous VI, Bilous VV (2019) History of medicine and medical art. Chernivtsi. 284. (in Ukrainian)
13. Kharkiv Homeopathic Society of Homeopathic Physicians. Retrieved from <http://www.homeopat.kharkov.ua>
14. Homeopathy. Odessa grains or globuli in Odessa. Retrieved from <http://www.polykhrest.od.ua>
15. Tolochko VM, Adonkina VIu, Semchenko KV, Vakulenko DV (2018) Homeopathic medicines in Ukraine: research of legis-lative support, range and economic availability. The Pharma Innovation Journal, 7(4): 762-66.
16. Tolochko VM, Vakulenko DV (2016) Study of problematic spectrs of homeopathic medicinal products compounding in the pharmacies. Retsept, 19 (3): 309-316.

17. Pokhmurska-Hudym N (2015) Analysis of the role of the state in the regulation of folk and alternative medicine in different countries of the European Union. Collection of scientific works. "Efficiency of public administration", 44: 82–90. (in Ukrainian)
18. Hutsol LP, Hutsol KM, Tsymbal IP (2019) Evidence base of classical homeopathy: sources, present, prospects. Phytotherapy. Chasopys., 1: 31-34. (in Ukrainian)
19. Yevtushenko VV (2020) Mechanisms of state regulation of folk medicine in Ukraine: organizational and legal principles: author. dis. ... cand. Sciences of the state. management : 25.00.02 / Yevtushenko Vyacheslav Viktorovich; Classic. private un-t. - Zaporozhye,- 20. (in Ukrainian)
20. Pokhmurska-Hudym N (2015) Analysis of the legal mechanism of public administration of folk and alternative medicine in Ukraine. Collection of scientific works, 43: 220-26. (in Ukrainian)
21. Shupyk National Medical Academy of Postgraduate Education. Retrieved from <https://nmapo.edu.ua/s/np/k/dyt-otorynolarynholohii/mizhnarodna-spivpratsia/1482-mizhnarodna-derzhavna-medychna-shkola-klasychnoi-homeopatii>
22. Current issues in folk and alternative medicine (2016) Health and longevity: basic research, implementation: Proceedings of the scientific symposium with international participation on April 8-9, 2016 // Edited by T.P. Garnik, V.A. Tumanova: Scientific publication. Kiev, 132. (in Ukrainian)
23. Oliinyk SV, Yarnykh TG, Gaidukova OO (2020) History of homeopathy development as a scientific and educational discipline. Application of methods of treatment and apipreparaty in medical, pharmaceutical and cosmetic practice: materials intern. scientific-practical conf. (March 25, 2020, Kharkiv). Kharkiv, 27-36. (in Ukrainian)
24. Osipenko S Yu (2011) Development of technology and methods of standardization of antiallergic drugs based on *Apis mellifica*: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 19. (in Ukrainian)
25. Pasichnyk MF (2011) Creation of a homeopathic remedy based on bee venom: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 21. (in Ukrainian)
26. Sergeyeva O Yu (2011) Creation and research of homeopathic complex antiallergic action in the form of granules: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 22. (in Ukrainian)
27. Chorna NA (2011) Development of composition and technology of homeopathic ointment for use in dermatology: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 20. (in Ukrainian)
28. Gaidukova OO (2011) Development and research of a complex homeopathic drug for the treatment of chronic fatigue syndrome: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 23. (in Ukrainian)
29. Sheremetyeva AV (2010) Theoretical substantiation of the composition, development of technology and research of the drug with surfactant: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 24. (in Ukrainian)
30. Oliinyk SV (2011) Development of composition and technology of homeopathic remedies from the medicinal plant *Cyclamen*: author's ref. dis. for science. degree of cand. pharmacy. Science: special. 15.00.01. "Drug technology, organization of pharmaceutical business and forensic pharmacy". Kharkiv, 24. (in Ukrainian)