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**INTEGRATIVE MEDICINE -
HOLISTIC CONCEPTUAL MODEL,
SCIENTIFIC AND EDUCATIONAL APPROACHES**

DISSERTATION SUMMARY

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The dissertation is in the field of higher education "Health and Sports" - code 7., scientific direction 7.1 "Medicine", Scientific specialty "Social medicine and organization of healthcare and pharmacy" It was discussed and proposed for defense by the Department of Social Medicine and Healthcare Organization", Faculty of Public Health at the Medical University "Prof. Dr. Paraskev Stoyanov" - Varna. The dissertation contains 263 pages and is illustrated with 9 tables and 38 figures. Contains 5 applications. The References include 714 literature sources, of which 92 are in Cyrillic and 622 in Latin.

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LIST OF ABBREVIATIONS

BMA/БЛС - Bulgarian Medical Association

SC of MU-Varna - Students' Council at Medical University of Varna

AMSB/АСМБ - Association of Medical Students in Bulgaria

BPhU/БФУ - Bulgarian Pharmaceutical Union

RPhC - Regional Pharmaceutical College

RC-Varna of the BAAPh/БАПФ - Regional Varna College of the Bulgarian Association of assistant-pharmacists

DCC/ДКЦ - Diagnostic Consultative Centre

GP - General Practitioner, Family physician, Family doctor

KENI in MU-Varna/КЕНИ към МУ-Варна - Commission of Ethics of the scientific research at Medical University of Varna.

WHO - World Health Organisation

KAP study - Knowledge, attitudes and practices study

MoH - Ministry of Health

BAS - Bulgarian Academy of Sciences

IM - Integrative Medicine

EBM - Evidence-based Medicine

RCTs - Randomised Controlled Trials

CAM - Complementary and alternative medicine

HP - Health promotion

PM - Preventive medicine

DG SANTE - Directorate General for Health and Food Safety

EC - European Commission

EP - European Parliament

EU - European Union

MEP - Member of European Parliament

MS - Member State

T&CM - Traditional and complementary medicine

TCM - Traditional Chinese Medicine

OED/ЗИД - Obligatory Elective Discipline

FED/ФИД - Free Elective Discipline

ACGME - Accreditation Council for Graduate Medical Education in USA

ABMS - American Board of Medical Specialties

4IR - The Fourth Industrial Revolution

INTRODUCTION

I keep six honest serving-men (They taught me all I knew);
Their names are **What** and **Why** and **When** And **How** and **Where** and **Who**.
R.Kipling*

Integrative medicine is a novel concept in modern healthcare. It is a holistic movement and aims to improve physical, mental and social health (well-being, quality of life) by judicious utilisation of all evidence based approaches to treatment, prevention and prophylaxis. Often divided and seen as incompatible and unequal conventional and unconventional methods, as well as health promotion as an applied strategy, find scientifically sound unification in integrative medicine. The historically existing schism between prevention and clinical practice, between orthodox and unconventional, is overcome by the evolutionary development of the integrative medicine idea.

WHY? We live in a civil society where every citizen has the right to equal access and free choice, including the care of health and cure of disease. The research interest in integrative medicine reflects the growing societal and individual needs for holistic clinical, scientific and educational approaches to health. More and more people are striving for a healthy and environmentally friendly life, which increases the interest in health promotion and disease prevention. More and more patients choose their therapy to include complementary methods along with the conventional treatment. The need for education in the field of integrative medicine has already been proven through numerous studies. In many countries around the world, such as the United States, Switzerland, Germany, France, postgraduate qualifications in integrative and complementary medicine are offered or such disciplines are added to students' curricula. There are still no traditions in this field in Bulgaria, so the research in the direction of "integrative medicine - conceptual modeling, science and education" is challenging, but relevant and would be socially significant.

The modern medicine is over-focused on the diagnosis and treatment of physical symptoms. The use of conventional drug therapy alone is often insufficient and associated with adverse reactions. All this puts rational drug therapy at the heart of global health policies, and the development of the idea of integrative medicine is part of these policies. Last but not least, with rising clinical costs, economic efficiency is becoming increasingly important as a central driver of health reform, supporting the resurgent humanistic approach to health promotion.

The relevance of the dissertation topic is emphasized by the fact that in December 2020 The Parliamentary Group on Integrative Medicine and Health has been set up in the European Parliament, with the idea of political and expert support for new integrative approaches to the contemporary public health challenges.

WHAT? The focus of this study is the concept of "**integrative medicine**" and its place in science and education around the world and in Bulgaria. It emerged as an ideological movement to integrate complementary and alternative medicine (CAM) into healthcare, but today it is much more than that. The definition of integrative medicine is constantly evolving, but it will always be patient/person-centered, affirming empathic relationships during therapeutic or prophylactic processes, judiciously applying all known scientifically proven therapies (conventional and CAM).

* The Elephant's Child, this is the starting verse in the classical textbook "Epidemiology" by L. Gordis

The central role of health promotion in the application of the integrative medical approaches has led to the increasing use of the term **integrative healthcare** instead of integrative medicine.

Following the overall goal and the derivative objectives of the dissertation, key events and documents related to the modern history of integrative medicine are initially traced, the current state of research in this interdisciplinary field is presented. As an innovative idea, integrative medicine requires terminological clarification, a clear delineation of the scope and content of the field, and it has been done. A conceptual model is proposed, defining the five main building blocks of integrative medicine, and the principles that support and would ensure the sustainability of the model are synthesized. No civilizational change could be achieved without the participation of dedicated professionals. The role of human resources is always pivotal and this is the reason why educational approaches in the field of integrative medicine and CAM are considered and proposed.

HOW? In the present study, **integrative exploratory sequential mixed-methods design** is applied, which includes four chronologically consecutive and logically following phases: **Phase I** - Study of the modern historical and institutional development of integrative medicine and conceptual modeling (2019-2021); **Phase II** - quantitative and qualitative study of educational needs (2021-2022, knowledge, attitudes and practices regarding CAM and integrative medicine - KAP study); **Phase III** - Dynamic Delphi study with educational focus (2022); **Phase IV** - Development of a conceptual educational model for achieving competencies related to integrative medicine and CAM (2021-2022).

The research ambition is to provide summarized scientific information (research, data, global and European experience, results of own research) to people who shape policies, ethical and educational standards in health and higher medical and health education. From the **standpoint of balanced research neutrality**, integrative medicine is considered and developed as a new medical and social category that must be studied and researched.

WHERE? The research, analysis and synthesis are part of a scientific project that has received ethical permission by the Commission of Ethics of the scientific research at Medical University of Varna/ KENI in MU-Varna (Protocol № 101 or 24.03.2021). The final ethical report is accepted with Protocol № 117/26.05.2022).

WHO? WHEN? The current dissertation for the degree of "Doctor of Science" follows the national and institutional priorities reflected in the "Strategy for Research Development - 2017-2030". The topic of the research is relevant and corresponds to the scientific priorities of the Medical University of Varna for the period 2021-2025, which include "innovative integrative approaches in the management of diseases and healthcare systems" (an integral part of Priority 5). The research work covers a period of 3 years (2019 - 2022) and reflects the scientific and clinical interests of the dissertation in the field of public health and CAM. The research methodology is originally developed and is a product of decades of experience and research guidance in the field of mixed-method approaches. The project is carried out in partnership and with the logistical support of the Students' Council at Medical University of Varna (SC), Association of Medical Students in Bulgaria (AMSB), Bulgarian Medical Association (BMA) through the official facebook group „Family Doctors in Varna“, Regional Pharmaceutical College in Varna, as well as the Regional Varna College of the Bulgarian Association of assistant-pharmacists. The sociological research in its part of questions to students was also supported by the university educational platform Blackboard. Thank you!

I. LITERATURE REVIEW IN BRIEF

Integrative medicine is presented as a concept, practice and education in an international context. Due to its interdisciplinarity and multi-layered nature, it is often used interchangeably with terms such as 'holistic medicine', 'individual medicine', 'complementary medicine' and others. Integrative medicine is all of these, but not only. The need for a clear definition of the research area in each scientific study is recognized, so a synthesized review of **key terms and definitions** in integrative medicine.

Strategic documents, events, legal acts related to the development of integrative medicine have been studied in details and in a timeline continuum. The international political and scientific debate related to integrative medicine is a debate on the scientific justification of **complementary and alternative medicine (CAM)**, so the dissertation reviews the **current development of research** mainly in the field of CAM, and here are outlined just the main directions. The literary review of the dissertation ends with a presentation of **educational approaches** in the field of integrative medicine. The global and European experience is studied not to be copied, but to be adapted and applied at the national level, with respect for the Bulgarian medical traditions and the existing standards in higher education.

1. KEY TERMS AND MODERN HISTORY OF INTEGRATIVE MEDICINE

Integrative medicine is a heterogeneous concept that brings together many separately existing areas. Simultaneously, new terms are emerging that overlap or have common ground with the broad field of integrative medicine. Defining of key terms is necessary due to the need for this new field in medical and public health science and practice to be studied and taught.

Conventional medicine refers to the broad category of medical practice, the study of which is included in the programs of higher medical schools. Conventional medicine is also called Western medicine, biomedicine, scientific medicine, allopathic medicine or modern medicine. These terms are synonymous.

CAM is an officially accepted concept in medical sociology. CAM covers a variety of medical systems, products, and practices that are not typically part of the conventional cure and care. Although CAM is defined by the pan-European research project CAMbrella, there is currently no generally accepted definition. It can be said that CAM is a European phenomenon, uniting many therapies, some of which originated on the old continent, such as homeopathy and naturopathy, and others are very popular in Europe, but are traditional, for example in Asia such as acupuncture and Ayurveda.

Due to rising treatment costs and the ever-increasing and growing demand for unconventional methods of prevention and treatment, the World Health Organization (WHO) supports the integration of CAM into health systems. The WHO initially adopted the concept of **traditional and complementary medicine (T&CM)**, specifying that a particular method or system perceived as traditional in one country may be considered conventional in another. Today, the WHO focuses on integrative medicine because it emphasizes the benefits of different medical systems and approaches to health. Since 2014, in the process of revising the ICD-10, the WHO includes in the ICD-11 for Mortality and Morbidity Statistics-MMS separate chapter on non-conventional medicine, the 26 Supplementary Chapter Traditional Medicine Conditions.

There are many definitions of integrative medicine. They unite around the provision of maximum quality and individualized care. Most definitions are clinically oriented, with integrative clinical practice selectively including elements of CAM in holistic treatment plans, along with conventional methods of diagnosis and treatment to increase the effectiveness and efficiency of treatment and to improve health outcomes.

The definition adopted by the European Society of Integrative Medicine (ESIM) in 2017 and established by the National Center for Complementary and Integrative Health (NCCIH), USA in 1999 prioritizes the importance of the relationship between specialist and patient or user, focuses on the whole person, is based on evidence and uses all appropriate therapeutic and prophylactic behavioral approaches, includes all health professionals and disciplines to achieve optimal health and cure.

The term "integrative medicine" is officially recognized in Bulgaria. "Integrative medicine is understood as a new development in modern medicine, which combines and unites classical and traditional methods of treatment with alternative and complementary methods and practices that are currently not considered part of conventional, i.e. traditional and conventional medicine. That is why this medicine is called integrative. This adjective is of Latin origin and literally means complete, unifying, connecting, common to several things" [Language Reference and Consultation Service at the Institute of Bulgarian Language at BAS].

It is necessary to conclude that in Bulgaria the development of the idea of integrative medicine is still in its initial stages, when the integration of CAM with conventional medicine is mainly in focus. Globally, integrative medicine is a broader term, as evidenced by the study of contemporary historical developments, presented through the time continuum of Figure 1, summarizing data from the official websites of international organizations, including NCCIH and ECHAMP.

Abbreviations of Figure 1

- | | |
|--|---|
| <ul style="list-style-type: none"> • Academic Consortium for Integrative Medicine and Health - ACIMH • American Board of Integrative Holistic Medicine - ABIMH • Complementary and Alternative Medicine - CAM • Consortium for Academic Centers for Integrative Medicine - CACHIM • European Society of Integrative Medicine - ESIM • National Institute of Health - NIH • The Academy of Integrative Health & Medicine - AIHM • Американска холистична медицинска асоциация/American Holistic Medical Association - AHMA • Европейски Парламент - ЕП • Европейски съюз - ЕС | <ul style="list-style-type: none"> • Комитета по околна среда, обществено здраве и безопасност на храните към ЕС - ENVI Committee • Международна класификация на болестите - МКБ • Национален център за комплементарна и алтернативна медицина на САЩ - NCCAM • Национален център по комплементарно и интегративно здраве на САЩ - NCCIH • Офис за алтернативна медицина на САЩ - OAM • Световна здравна организация - СЗО • Световната Здравна Асамблея - WHA • Съвет на Европа - СЕ • Съединени Американски Щати - САЩ • Традиционна и комплементарна медицина - T&KM |
|--|---|







Figure 1. Chronological continuum of normative regulations, global strategies and events in the field of integrative medicine

2. RESEARCH DEVELOPMENTS - A CURRENT STATE OF PLAY

Integrative medicine is a holistic idea that combines all possible prophylactic and therapeutic approaches for which there is reliable scientific evidence. The field covers a large and diverse range of practices, products and disciplines. Therefore, the scope of research can include the full range of basic, observational and experimental studies. Herewith, for the purposes of the required summary is used the research framework included in this Strategic Plan (2021-2025) for the development of science at the USA NCCIH (pioneer in supporting and funding research and education in integrative health). The NCCIH defines the following research directions for strategic development and investment:

- 1) Development of fundamental research and research methods in the field.
- 2) Development of research related to holistic health and the integration between complementary and conventional care.
- 3) Promoting research in the field of health promotion, health recovery, resilience, disease prevention and symptom management.
- 4) Providing reliable scientific evidence in the field of CAM interventions.
- 5) Support of human resources in the field of integrative medicine - trainings, financing of qualifications in the field of research.

Integrative medicine research, as quantity and quality, has been gradually increasing over the last 30 years. When typing keywords "integrative medicine" in the PubMed search engine with applied filters: Clinical Trial, Meta-Analysis, Randomized Controlled Trial, Review, Systematic Review, Humans, English, from 1990/1/1 - 2020/12/31, the tendency of increased scientific interest in the field is clearly outlined. Proof of this are the following data: for the period 1990-2020, 7,301 results were obtained on the keywords "integrative medicine", and the publications gradually and steadily increased over the years (Figure 2).

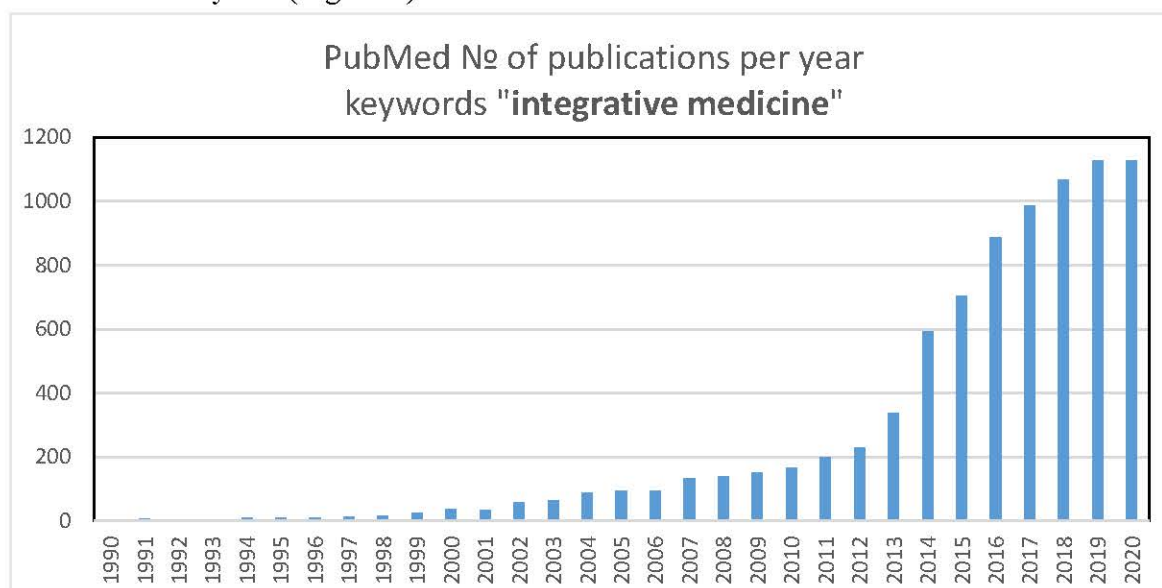


Figure 2. Current status (number of scientific publications) in the field of integrative medicine, registered in PubMed in the period 1990-2020 (applied filters: Clinical Trial, Meta-Analysis, Randomized Controlled Trial, Review, Systematic Review, Humans, English, from 1990/1/1 - 2020/12/31).

Comparative analysis with the term CAM has shown both the earlier emergence of the term "integrative medicine" in science and its wider range, including CAM. In the present dissertation CAM is considered in the context of the broader concept of "integrative medicine", but focuses research analysis due to the socially significant demand to develop science and education related to CAM.

3. EDUCATION IN INTEGRATIVE MEDICINE AND CAM - THE GLOBAL AND EUROPEAN EXPERIENCE

Initially, the inclusion of the "integrative medicine" concept was related to the inclusion of CAM in the curriculum. The first steps were taken in the United States, where in July 1999 at a historic meeting at the Fetzer Institute, Michigan, a "Consortium of Integrative Medicine" was formed, with representatives from prestigious universities, including Harvard, Stanford, Arizona and others. These universities have founded this consortium because they already have clinical centers for integrative medicine and have expressed interest in developing education in this field, relying on the support of their academic leaders. Today, the Consortium includes over 70 academic organizations not only from North America (USA, Canada, Mexico), but from South America (Brazil) and Australia.

Globally and in Europe, training in integrative medicine and CAM is evolving in the direction of strengthening regulations, along with increased supply and demand to ensure safety for CAM users (patients and healthy people for prevention). In the context of cultural diversity and historical traditions, education and science in Europe have their common features but also their differences. In order to summarize the forms in which the education and science of integrative medicine on the old continent is structured, the approach of archetypal modeling of the existing European educational and scientific models is used.

The European diversity of educational and research centers for integrative medicine, inside and outside the academic/institutional environment, can be summarized in ten different archetypes (See Figure 3). In some of the archetypes, science and education go hand in hand, while others are purely research centers.

The first type includes a department or research center for integrative medicine in the structure of an existing medical university (in Germany, Sweden, Russia). There is structural inclusion, institutionalized education and research. In Russia, the departments of integrative medicine have been a fact since the beginning of the XXI century. In the **second type** there is an inclusion in a program. For example, the inclusion of lectures on acupuncture, other CAM-methods in the programs of neurology, physiotherapy and others. Collaborative research and education projects (**third type**) in and between university hospitals or integrative medicine clinics are also a fact throughout Europe. Educational and research centers supported by the Ministry of Health (**fourth type**) are managed by national or regional health authorities, which ensures a recognized identity and funding. In Bulgaria, in the period from 1988 until 1998 The National Center for Phytotherapy and Folk Medicine had existed under the direct supervision of the Ministry of Health (MoH), which develops active research and educational/training activities. Qualification courses in phytotherapy, apitherapy, iris diagnostics, homeopathy had been offered. The **fifth type** represents a university with a Faculty of Medicine, Public Health, and/or Pharmacy, and a separate department / center / institute of integrative medicine. For example, the Faculty of Medicine at the University of Bern, Switzerland includes the Institute of Complementary and Integrative Medicine (IKIM). It is also possible to attend the existing separate educational programs related to integrative medicine and single health at the university (**sixth type**). Joint certified courses between universities, educational centers, and professional organizations are also developing dynamically (**seventh type**). For example, in our country such courses are clinical homeopathy courses, which are carried out in collaboration between medical universities in conjunction with the European School of Clinical Homeopathy, and the graduates of the modules receive a certificate and credits from BMA, BPhU and BAPh. The **eighth type** are the certified courses

provided by accredited educational institutions in the field of non-formal lifelong learning, which are increasingly supported by national or regional health insurance institutions. For example, postgraduate courses accredited by the NHS (UK) are increasingly being offered, especially in the field of integrative oncology. Certified courses in a non-institutional environment, supported by professional organizations (**ninth type**) are a fact in our country. For example, such are the two-year course titled “DHU Academy of Schussler Therapy and Integrative Medicine”, certified by the German Academy for Homeopathy and Naturopathy (DAHN), traditionally in collaboration with professional organizations such as BMA, BPhU and BAPh; the certified courses in Homeopathy and Integrative Medicine, offered by Edicta Center for Health and Education which can be completed with a European diploma from the European Committee for Homeopathy (ECH). The **tenth type** are mainly research centers, as independent stand-alone institutes.

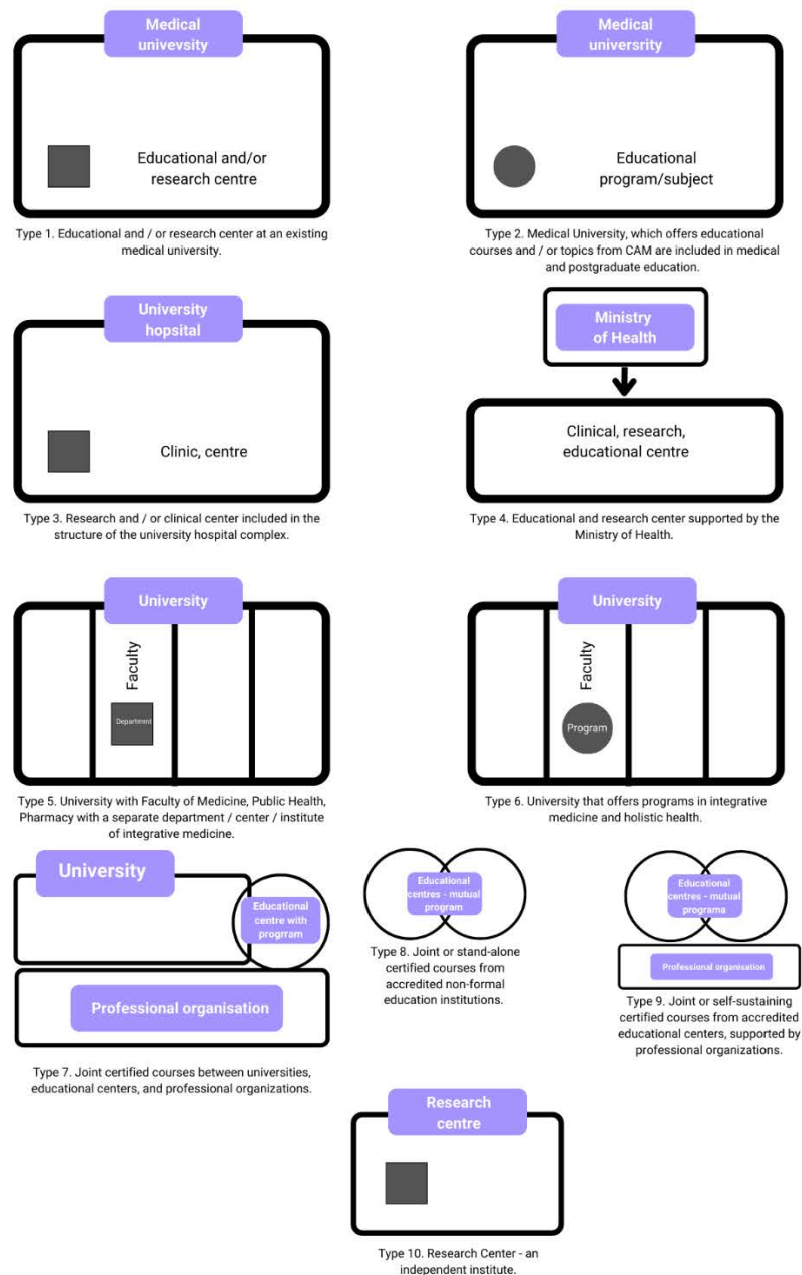


Figure 3: Archetypes of the Educational and Research Centers for Integrative Medicine and CAM in Europe. Abbreviations: integrative medicine- IM; complementary and alternative medicine (CAM).

The proposed archetypes of educational and research centers are the result of in-depth analysis and participatory approaches (courses and conference attendances, professional certification, teaching). There are no right or wrong decisions regarding the forms of offering education in integrative medicine and CAM. The study of the awareness, attitudes and needs of future and current professionals in primary healthcare is an important stage in the development of education in integrative medicine and CAM at a national level.

II. AIM, OBJECTIVES, STUDY DESIGN, METHODOLOGY

1. AIM AND OBJECTIVES OF THE STUDY. HYPOTHESES

AIM

Researching the concept of integrative medicine and its place in science and education in Bulgaria.

OBJECTIVES

1. Presentation and analysis of the historical and institutional developments of integrative medicine.
2. Development of a short guide with key terms and their definitions in the field of integrative medicine.
3. Creating a holistic conceptual model of integrative medicine.
4. Needs assessment for education in the field of integrative medicine. This objective consists of two components:
 - research of awareness, attitudes, behavior and interests of student and professional communities regarding CAM, health promotion and the concept of "integrative medicine".
 - Delphi study with an educational focus among experts in the field of higher medical education and healthcare.
5. Development of a conceptual educational model for achieving a profile of key (general) and functional (professional) competencies related to integrative medicine.

HYPOTHESES

The main working hypothesis related to the presented research is that the current development of the innovative concept of "integrative medicine" combines all possible science-based approaches (conventional, CAM, health promotion) to achieve optimal health and quality of life. Therefore, the adjective "integrative" is synonymous with "holistic", "harmonious", "synergistic" rather than with "complementary and alternative".

Most dynamically has been developing the research in the field of CAM, due to an imbalance between ancient empirical knowledge and insufficient modern scientific evidence. Another priority is the development of educational standards in the field of CAM in order to achieve fair integration not only in healthcare but also in the medical education. It is assumed that experts will support this development of CAM as part of integrative medicine.

Working hypotheses regarding the own quantitative and qualitative sociological research, related to the needs-assessment for education in the field of CAM and integrative medicine by studying the awareness, attitudes, interests and behavior of students, doctors and pharmacists:

- There is no difference in terms of awareness, attitudes and behaviors regarding CAM between the groups of students and the professionals (general practitioners and pharmacists).
- There is interest among students related to CAM and integrative medicine. There is interest among professionals related to CAM and integrative medicine.
- General practitioners use CAM for their own needs and for their families, as well as prescribe/recommend it to their patients. Students use CAM for treatment and prevention.

- The concept of "integrative medicine" is unknown or understood only as CAM, so more information is needed.
- Education is needed at three directions: at the undergraduate and postgraduate levels as qualification and acquaintance of experts in education and healthcare; and lifelong learning.
- Integrating CAM into the university curricula would better prepare physicians for their future professional tasks. Family physicians, pharmacists and assistant-pharmacists need additional information and would participate in training on CAM and integrative medicine.

The concept of "**double competence**" is gaining popularity in healthcare. It means a combination of competences for conventional and unconventional therapy and prevention. Answers to questions related to the need to build such competencies are expected.

2. MIX-METHODS DESIGN AND ORGANIZATION OF THE STUDY

Integrative exploratory sequential mixed-methods design is applied (Figure 4.), which adds to the qualitative and quantitative sociological research tools the methods of the humanities, natural sciences and engineering.

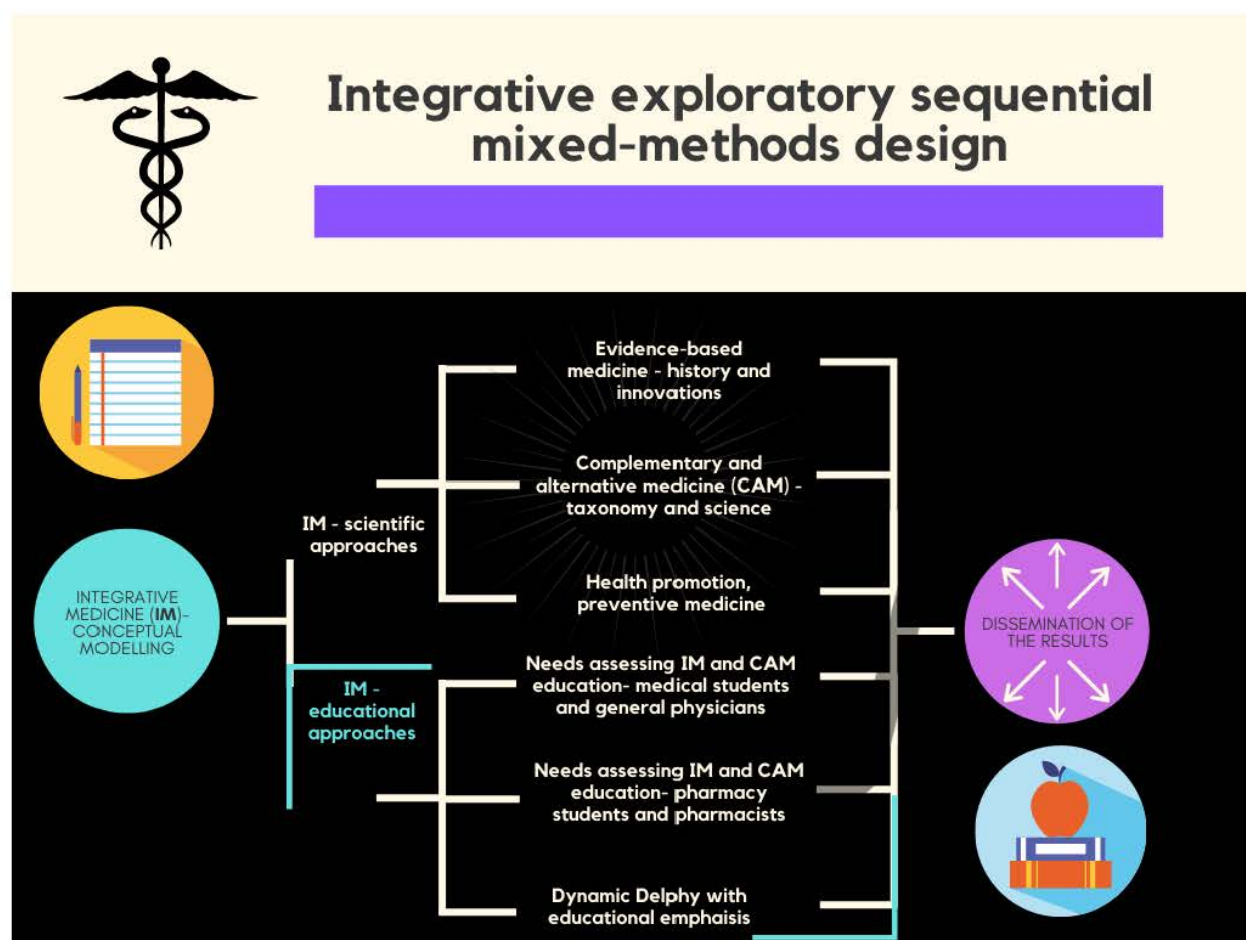


Figure 4. Study design (integrative exploratory sequential mixed-methods design)

The presented study includes four chronologically consecutive and logically successive phases:

- **First phase** - Study of the modern historical and institutional developments of integrative medicine and conceptual modeling (2019-2021)

- **Second phase** - Quantitative and qualitative study of the educational needs among students and professionals in primary health care (2021-2022)
- **Third phase** - Dynamic Delphi study (February - May 2022)
- **Fourth phase** - Development of a conceptual educational model for achieving competencies related to integrative medicine and CAM (2021-2022).

THE SECOND PHASE involved quantitative research with a qualitative component: A holistic concept such as "integrative medicine" requires a comprehensive research approach that takes into account all the characteristics of the environment. Sociological tools are used to study the awareness, attitudes, behavior and needs of students (in medicine and pharmacy, ≥ 18 years), and general practitioners and pharmacists (≥ 18 years) related to CAM; as well as awareness of integrative medicine. The information obtained through a direct individual online / paper-based survey leads to the delineation of a profile of competencies (key and professional).

Instruments for the second phase: Four tools (questionnaires) were developed, aimed at the four target groups: general practitioners, medical students (with the possibility of dental medicine), pharmacists and assistant-pharmacists, students of pharmacy (with the possibility of ass.-pharmacy). Preliminary, the existing standardized tools had been investigated such as the Integrative Medicine Attitude Questionnaire (IMAQ) and the CAM Health Belief Questionnaire (CHBQ). It was concluded that cultural context is important, therefore literal translation and strict adherence to a validation protocol are not always adequate in a particular national context.

The research tools are entirely made according to the ethical requirements at the Medical University of Varna. As a result of a three-stage research process, four original versions of instruments were developed. Two types of questions are mixed, and the specific quantitatively measurable questions include open qualitative questions.

Target population and procedure for recruiting participants in the second phase of the study: In the period from April 7, 2021 to October 20, 2021, the four developed instruments were distributed ("uploaded" as a google-form) on the official website of the SC at the Medical University of Varna (uploaded on May 24, 2021); of AMSB (uploaded on 12.05.2021); BMA through the officially announced Facebook group "Family doctors in Varna"; RPhC in Varna (uploaded on 21.05.2021), as well as RC in Varna of APh (uploaded on 8.06.2021). The sociological survey in its part questions to students was also supported by the university platform Blackboard (message uploaded on 2021). A paper questionnaire was developed for family doctors, but the survey among them was conducted mainly through the online platform.

THE THIRD PHASE included a qualitative Delphi study (February - May 2022) to reach an understanding and, if possible, consensus among experts in higher education (medicine, pharmacy) and public health on the place of health promotion and CAM, and in general of integrative medicine in higher medical, pharmaceutical and health education in our country.

Initially, the Delphi study provides the participating experts with the summarized results of the first and second phases of the study. According to the COVID-19 epidemic situation (early 2022), the classical Delphi in two rounds was adapted, using semi-structured questionnaire / interview with each of the experts in one round. The study is called **Dynamic Delphi** because of the nature (need for adaptation) of the pandemic research process. The idea to form 3 expert panels (political management, institutional and teaching), each representing a relatively homogeneous group was implemented. Belonging to the specific group is according to the leading professional expertise, due to which the experts are invited to participate, respecting the right to anonymity (no names are provided in the final report).

The steps for involving the participants in the Delphi study were: Step 1. Defining areas and criteria; Step 2. Formation of the lists from which the participants will be selected; Step 3. Determining the participants according to the specific objective situation and time frame, on the principle of "first responder".

Instruments: The Delphi-form and the final document were generated sequentially. This qualitative phase was dynamically adapted to the pandemic situation (hybrid conduct), for the most part being conducted as an online study and both google-forms (informed consent, personal data form and Delphi-form) and word-format sent forms, which the experts had the opportunity to fill in (one of the two options), and many of them expressed readiness for further discussions in a natural academic environment, live. Subsequently, the experts received a summary document from the project email - integrative.med.key@gmail.com.

THE FOURTH PHASE, last as a chronological sequence, included the development of a conceptual educational model for achieving key and professional competencies related to integrative medicine. The importance of this phase was later emphasized as the large number of participants in the second and third phases of the study indicated that they needed more information related to CAM and integrative medicine.

3. MATERIAL AND METHODS OF THE STUDY

Material: Bulgarian and foreign literary sources, publications, abstracts and articles related to integrative medicine. Statistics and research in the field of evidence-based integrative medicine. Open source information related to global strategies, regulations and directives in the field.

Methods:

- **Literature review;**
- **Quantitative and qualitative (Delphi study)** sociological methods;
- **Statistical methods** - descriptive statistical methods are used. The platform for conducting online surveys with the students and the professionals allows the generation of spreadsheets, with the possibility of direct transfer as results in Excel. The specialized software IBM SPSS Statistics, version 24 was used for the statistical processing of the primary information. The statistical processing of the survey includes verification of the information, coding of the results, and preparation of one-dimensional and two-dimensional distributions and graphical analysis of the respondents' distribution.
A descriptive analysis was made to identify the required characteristics of the sample from the non-interventional survey. A Chi-Squared test (non-parametric method, for qualitative variables) was applied to test the hypotheses. The obtained results are evaluated as statistically significant when $p\text{-value} < 0.05$, thus rejecting the null hypothesis.
- **Graphical method** - to present the results of the statistical data.

The scientific project has received ethical permission by the Commission of Ethics of the scientific research at Medical University of Varna/ KENI in MU-Varna (Protocol № 101 or 24.03.2021). Formally, it started on the 7.04.2021 and the final ethical report is accepted with Protocol № 117/26.05.2022).

III. HOLISTIC CONCEPTUAL MODEL. RESULTS FROM OWN STUDIES. DISCUSSION

Integrative medicine is a new idea. However, historical sources prove ancient holistic roots. Therefore, the study and promotion of integrative medicine have to go through conceptual clarification. Integrative medicine has a humanistic and pragmatic potential to unite CAM, conventional medicine and health promotion. The idea of integrative approaches in medicine is powerful because it is supported by the increased demand for person-centered and holistic approaches to health and disease.

1. HOLISTIC CONCEPTUAL MODEL. PRESENTATION AND DISCUSSION

The beginning of the conventional therapy dates back to the time when antibiotics were discovered in 1928 and the management of acute diseases improved significantly. The pharmaceutical model of therapy has been created, in which drugs are the main means of dealing with the disease. Two years earlier, the term "holism" was introduced, defined as "natural processes / tendencies in nature that, through creative evolution, form complete structures representing more than the sum of their constituent parts" [Smuts, 1927]. However, holistic approaches to health and disease have been "silenced" for a long time due to major advances in pharmacotherapy and the belief that this is enough to tackle disease. In the early 1960s, it became clear that chronic diseases are a major public health problem and that drug therapy alone is insufficient. A holistic approach to health and disease is needed. As a result, the social interest in both preventive strategies in medicine and in the systems and methods of CAM has been revived.

Today, the idea of holistic health encompasses the global **One Health** movement, which recognizes the fundamental link between the environment, human and animal health and encourages the joint coordinated efforts of all experts working in the field of health promotion. The holistic approaches to health are also supported by the "**exposome**" theory, as an opportunity to study the integrated impact of all environmental factors on health. The sustainable transition from a linear to a **circular economy** is also part of the modern holistic approaches to health.

Holism, as an idea applicable to the human experience, refers mainly to phenomena that are not static and change over time, that is, to processes. In medicine, health is seen as a dynamic individual and social phenomenon, so holistic approaches are most appropriate. The term **integrative health** has also been introduced, which includes care of health, not just of disease, with all possible methods. In this sense, the adjectives "holistic" and "integrative" can be considered synonymous.

In the process of creating the conceptual model, the building blocks were clearly identified, which are considered as complementary and supporting each other and not as opposites.

1.1. Presenting the holistic conceptual model

The basis of the original conceptual model, created in the implementation of the third research objective of the dissertation are the studied existing definitions from the end of the last century to 2021, as well as the generalized critical dimensions and principles of integrative medicine.

▪ FIVE MAIN BUILDING BLOCKS

The proposed conceptual model outlines the **five main building blocks** of integrative medicine, within the three characteristics of integrative medicine defined below such as **philosophy, structure and process**. All **three principles** are synthesized, which support and would ensure the sustainability of the model. The five elements are (Figure 5):

1) Medical Education and Postgraduate Training.

Essentially, any conceptual model should be applicable, and the necessary primary condition for this are the human resources, which can be divided into two groups: professionals practicing different methods of prevention and treatment and researchers who are mainly engaged in detecting and systematization of scientific evidence in the field of integrative medicine. In this regard, education (as part of the undergraduate course or as a postgraduate qualification) needs to offer programs introducing medical professionals both in the field of integrative medicine and in the theoretical formulations of evidence-based medicine. Medicine is a relatively conservative field and the entry of new ideas and concepts can only happen through the accumulation of reliable scientific evidence. Moreover, the professions in the field of medicine are regulated, which imposes additional restrictions in order to provide better and safer services.

2) Conventional Western medicine.

The term "conventional medicine" refers to the broad category of medical practice whose study is included in the programs of higher medical schools. Conventional medicine is also called Western medicine, biomedicine, scientific medicine, allopathic medicine or modern medicine. These terms are synonymous. Conventional medicine is the traditional widespread and socially accepted medicine for Bulgaria.

3) Complementary and alternative medicine (CAM).

CAM includes a variety of medical systems and methods based on knowledge, skills and practices derived from theories, philosophies and experiences used to maintain and improve health, as well as to prevent, diagnose, alleviate or treat physical and mental illnesses. CAM methods are mainly used outside of conventional health services, but in many countries some therapies are adopted by or adapted to conventional health systems.

4) Evidence-based integrative medicine.

The first definition of evidence-based medicine (EBM) was published by David Sackett et al. in 1996: "Evidence-based medicine is the conscientious, clear and reasonable use of current best evidence in making decisions about individual patient care. This means integrating individual clinical expertise with the best available external / independent clinical data from systematic studies". With the highest scientific validity are considered the systematic reviews, meta-analyses, RCTs (the gold standard in EBM). All of these should comply to integrative medicine as a science and practice.

5) Health Promotion and Preventive/Preventative Medicine.

The fields of preventive medicine and health promotion share common goals for promoting population and individual health, preventing specific diseases and applying modern epidemiology to achieve these goals. The purpose of preventive medicine as a science and practice traditionally covers primary, secondary and tertiary levels of prevention. Health promotion is a broader concept, it includes both prevention and enabling people to increase control over the factors that determine health and thus improve it.

▪ CHARACTERISTICS

Only in the presence of the 5 components (Figure 5) indicated in the conceptual model can it be claimed that integrative medicine is applied. A conceptual model has been developed within the defined **three characteristics** (Figure 5) of integrative medicine: **philosophy and cultural values/identity; structure and process**. They determine and complement each other, forming the essential center of integrative medicine.

1) Integrative medicine as a philosophy and cultural values

This is the characteristic that builds the foundations and unites the five building blocks of integrative medicine (Figure 5). It really puts the patient at the center, encompassing both treatment and prevention, by integrating all healthcare professionals. In this regard, the term "integrative medicine" is increasingly being replaced by "**integrative healthcare**". The philosophy of integrative medicine is open to various therapeutic and prophylactic modalities, as long as they help and meet the physical, emotional and spiritual needs of the patient. The central idea is to provide a framework for effective individualized, person-centered care. Applying an integrative medical approach requires professionalism, in which the holistic model of health is adopted. This philosophical worldview led to the idea of integrative medicine and includes the following human values:

- Human health is an integral part of the health of all ecosystems on the planet;
- Health is a holistic whole of body, mind, spirit, social and environmental well-being;
- Focus on health and prevention, not just disease and treatment;
- Respect and use of the natural qualities inherent in the human body to protect and restore health;
- Priority of health promotion and disease prevention; treatment of the causes of the disease;
- Respect for the role of human behavior as a leading determinant of health;
- Partnership between patient and attending physician; a partnership between the healthy individual and his / her medical / health consultant for successful prevention and a healthy lifestyle;
- Evidence-based medicine has a central and crucial role in the implementation of all approaches to prevention and treatment.

2) Integrative medicine as a structure

Integrative medicine is heterogeneous in structure, but provides a unifying platform that:

- Describes the components and the infrastructure that connects them together;
- Integrates non-hierarchically conventional medicine and CAM.
- Implements a collaborative team approach to collaboration, involving both practitioners and the individual, and the communities in which integrative health services are provided.
- Provided public funding and flexible cost-effective financial relations;
- Ensuring full access to conventional and CAM services.
- Development of academic programs for integrative medicine and CAM in medical universities.

3) Integrative medicine as a process

Integrative medicine is a dynamic process. This characteristic includes the internal dynamics of integrative interaction, the realization of the unique communication of professionals in the field of integrative medicine with healthy people seeking preventive services or with patients. In the model, integrative medicine is associated with the development of various forms of team-oriented medical practices in the context of Western healthcare systems.

▪ PRINCIPLES

Each conceptual model must follow certain fundamental ideas or **organizing principles** (Figure 5) in order to be practically applicable and sustainable. The current model of integrative medicine also follows specific principles that would ensure evolutionary development:

1) Coherence

Health is about the interaction and interdependence between each cell, tissue and organ. In the current conceptual model, this principle means introduced standards and coherence between all building blocks, both between different specialists - conventional and unconventional, and between patient-physician. The principle also includes coordination with the normative documents, standards for trained in the regulated specialties, licenses, etc., which is a guarantee for the competence of the certified specialists.

2) Heterogeneity, equality, tolerance

Integrative medicine is a heterogeneous field in terms of methods. Beauty is in diversity; equality and equivalence - the lexical meaning of the word "integration" means the gathering of equal components in a common body or structure.

3) Effectiveness, efficacy, safety

A combination of economic efficacy, long-standing efficiency, safety and sustainability of results, which means a lasting improvement in quality of life and well-being. Utilizing the full potential of public health and scientific advances in all fields, including high technology (nanotechnology, biomedical technology, clinical engineering).

It is clear that the strategic implementation of the model needs to be provided with financial resources, both public and private. Public and private investment in science are interrelated, but the most important thing is to fund it according to results.

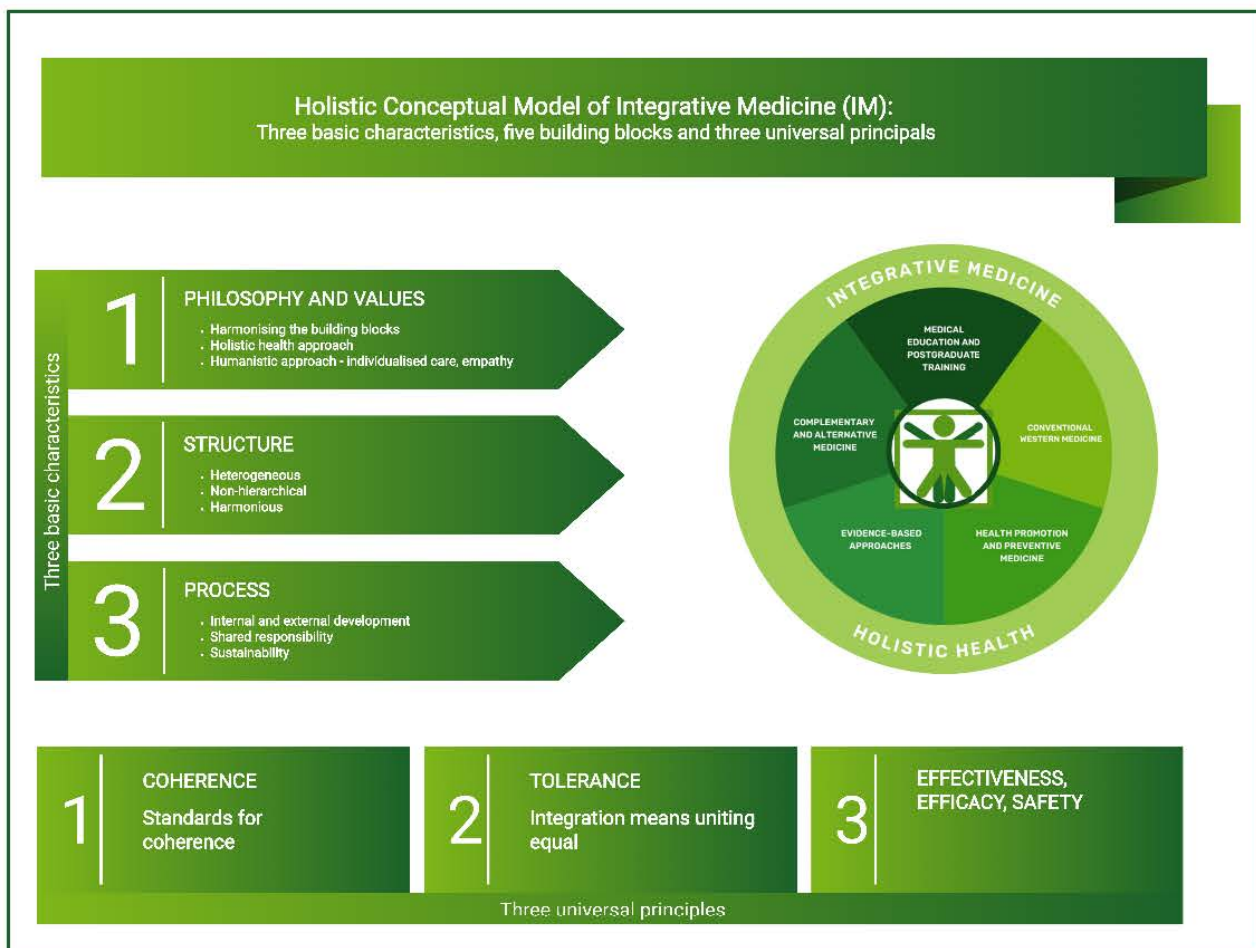


Figure 5: Holistic conceptual model of integrative medicine - characteristics, building blocks, principles

All the building blocks of the proposed conceptual model have their own methods and merits for maintaining health, but the obvious sensible choice would be an approach that encompasses all of them.

1.2. The holistic conceptual model. Discussion

The presented holistic model can be used to study the idea of integrative medicine, not only as a theoretical territory, but also as an embodiment of all the past experience of mankind in the field of medical art. Following the introduced principles would ensure the sustainability of the model in real life. Following the principle is a key idea in the proposed model, because the principles indicate the values on which the essence of each realization is based.

The proposed model approaches as a mission the North American and Scandinavian models of health systems called "green medicine" and "green health", where the key feature is sustainability, namely to live and work in a way that allows others to live well, both now and in the future.

The WHO recognizes that 25% of the global burden of all diseases is due to poor environmental quality and 60% of the benefits we receive from environmental resources are rapidly deteriorating due to unsustainable governance. Green health care starts with working conditions that provide opportunities for good health for the health professional to be complete. Practicing medicine in a sustainable way begins with a focus on prevention and health promotion, including one's own health.

Globally, clinicians and researchers are increasingly using the term integrative medicine to express the link between CAM and conventional biomedicine. However, integrative medicine is not just a combination medicine, but a highly organized system whose primary goal is the bio-psycho-socio-spiritual health of patients, using both conventional and CAM methods in the context of a supportive and effective relationship between therapists/healers and patients. Good examples of successfully applied integrative medical models are a fact. The presented holistic conceptual model reflects precisely this extension in the definition of integrative medicine, theoretically supporting the transition from negative attitudes to reasonable, informed and cost-effective approaches to CAM, health promotion and integrative medicine in Bulgaria.

2. RESULTS FROM THE ORIGINAL RESEARCH. DISCUSSIONS

No concept should be considered outside the real ecological situation and separated from the specific cultural environment. A multidimensional concept such as "integrative medicine" requires complex research approaches that take into account both the quantitative and qualitative characteristics of the environment, especially when the focus is on education. For this reason, the presented research made it possible to analyze the extent to which integrative medicine is accepted and known as a field and whether the definition of "integrative" is synonymous with "holistic", "harmonious", "synergistic" rather than "complementary and alternative". Further, the conducted research (individual online survey and Delphi study) was an opportunity for dissemination of the ideas of integrative medicine. Own research is a reflection of the main public debate regarding the insufficient quantity and quality of scientific evidence in the field of CAM, which shows low levels of awareness and need for education. In this regard, awareness of CAM and integrative medicine is studied, as well as attitudes, behavior and interests of student and professional communities regarding CAM. After analyzing the data from this study, they were presented to experts in the field of health and higher education in the subsequent Delphi study with an educational focus.

The communities, among which was conducted the research, provided valuable perspectives on the educational requirements and helped identify next research and pedagogical steps. In this sense, the proposed **universal theoretical frameworks for the future development of curricula for CAM and integrative medicine** are based on the opinions and attitudes of the practitioners

(family doctors, pharmacists and assistant-pharmacists), the students (medicine and pharmacy), and on the expertise of people designing and implementing educational programs and public health policies (Dynamic Delphi study). Previous theoretical research, analysis and practical teaching experience have led to the outlining of recommended program frameworks and a profile of key (general) and functional (profession-related) competencies (see Figures 32 and 33, Annex 5 in the dissertation), which would help both the creation of programs related to CAM and integrative medicine.

2.1. Study among students and professionals.

In fulfillment of the fourth dissertation objective, the awareness, attitudes, behavior and interests of student and professional communities regarding CAM and the concept of "integrative medicine" (variant of knowledge, attitudes, practices / KAP study) were studied. In the period (April 7, 2021 to October 20, 2021) a regional observational survey was conducted with an online / paper questionnaire among the target population. The differentiated four target groups in the study were divided into two main groups: 1) **The professionals' group** - these are the representatives of primary care in the Varna region - general practitioners, pharmacists and assistant-pharmacists; 2) **The students' group** - students studying medicine and pharmacy mainly from the Medical University of Varna.

The developed tools mixed two types of questions (open and closed), which allows to expand and confirm the quantitative findings of the study through qualitative information (narratives). Therefore, the presentation of data will be grouped as quantitative and qualitative data, following the five questionnaire parts, as follows: part one - awareness of CAM (definition, individual methods and systems, sources of information related to CAM); part two - attitudes and behavior related to CAM; part three - interests and need for training in the field of CAM; part four - awareness of integrative medicine. Literature review and the conceptual modeling have proven that integrative medicine is a new concept in Bulgarian healthcare, science and education. It is therefore realistic to examine basic awareness.

2.1.1. Results regarding the survey among students and professionals

The results are grouped according to the parts of the questionnaires.

- **Social, demographic and professional characteristics of the sample.**

The socio-demographic characteristics of the sample are summarized in Tables 1 and 2. The participants among the professionals are mainly from the Varna region. Intragroup characteristics are also presented in order to make a comparative analysis.

Table 1. Socio-demographic characteristics of the professionals' sample (n=185; medicine, dentistry, pharmacy, assistant pharmacists)

PROFESSIONAL GROUP - characteristics of the sample					
Family doctors 114 respondents	Possible answers	Results % (count)	Pharmacists 71 respondents	Possible answers	Results % (count)
Speciality	• General medicine • Internal disease • Other (pediatrics) • Specialization	93 % (106) 1.8 % (2) 0.9 % (1) 4.3 % (5)	Workplace	• pharmacy • distribution • university teacher • pharma industry	94.4 % (67) 2.8 % (2) 1.4 % (1) 1.4 % (1)
Professional experience	• ≈ 5 years • ≥ 10 years • ≥ 15 years • other	19.3 % (22) 46.5 % (53) 33.5 % (38) 0.9 % (1)	Professional experience	• ≈ 5 years • ≥ 10 years • ≥ 15 years • other	29.6 % (21) 32.4 % (23) 32.4 % (23) 5.6 % (1)
Gender	• male • female	24.6 % (28) 75.4 % (86)	Gender	• male • female	26.8 % (19) 73.2 % (52)
Age group	• < 26 years • 26-35 years • 36-45 years • 46-55 years • 56-65 years • > 65 years	0 % (0) 15.8 % (18) 33.5 % (38) 45.6 % (52) 11.4 % (13) 0.9 % (1)	Age group	• < 25 years • 26-35 years • 36-45 years • 46-55 years • 56-65 years • > 65 years	2.8 % (2) 29.6 % (21) 39.4 % (28) 23.9 % (17) 4.2 % (3) 0 % (0)

Table 2. Socio-demographic characteristics of the students' sample (n=208; specialties: medicine, dentistry, pharmacy, assistant-pharmacists).

STUDENT GROUP - characteristics of the sample					
Medicine, Dental medicine 145 respondents	Possible answers	Results % (count)	Pharmacy (Masters and Bachelors) 63 respondents	Possible answers	Results % (count)
Speciality	• Medicine • Dental medicine	84.1 % (122) 15.9 % (23)	Speciality/ Qualification	• pharmacy • assistant pharmacists	82.6 % (52) 17.5 % (11)
Professional experience	• 1 year • 2 year • 3 year • 4 year • 5 year • 6 year	9 % (13) 23.4 % (34) 15.2 % (22) 21.4 % (31) 20.7 % (30) 10.3 % (15)	Professional experience	• 1 year • 2 year • 3 year • 4 year • 5 year	15.9 % (10) 31.7 % (20) 28.6 % (18) 19.0 % (12) 4.8 % (3)
Gender	• male • female	37.9 % (55) 60.7 % (88) 1.4 % (2)	Gender	• male • female	17.5 % (11) 81.0 % (51) 1.6 % (1)
Age group	• 18-25 years • 26-35 years • > 35 years	93.8 % (136) 5.5 % (8) 0.7 % (1)	Age group	• 18-25 years • 26-35 years • > 35 years	92.1 % (58) 6.3 % (4) 1.6 % (1)

Analysis of socio-demographic characteristics of the sample:

The sample consists of 393 respondents, divided into two main groups - practicing professionals - 185 and students - 208 (See Tables 1 and 2). In the group of professionals 62% (114) are family doctors and 38% (71) pharmacists and assistant-pharmacists. Among students, 70% (145) are medical / dental medicine students, and 30% (63) are pharmacy / assistant-pharmacists. Females predominate in the professional group, which is a reflection of the steady trends of feminization among family physicians and pharmacists. 75% of the participants in the professional group (86) are women. Among the student respondents 67% (139) are female, among the medics 61% (88) are female - relative shares that are representative of the student population.

Although the professional profile is pre-established as an inclusive criterion, the ratio between the different occupational groups is as follows: a total of 185 professionals, of which 114 are family doctors (62% of the sample). Among the respondents from the group of doctors, the respondents in the age group 46-55 years predominate - 45.6% (n=52), and among the pharmacists the most

are those aged 36-45 years - 39.4% (n=28), which corresponds to the national demographic characteristics of the community of family physicians, pharmacists, and assistant pharmacists. Regarding the duration of professional practice among family doctors, doctors with ≥ 10 years of professional experience predominate - 46.5% (n=53), as combined with those who indicate experience ≥ 15 years, general practitioners with ≥ 10 years of experience become 80 % (n=91) of the sample.

Among the group of pharmacists, 94.4% (67) reported working in a pharmacy; 2.8% (2) in a distribution warehouse, and two work in a pharmaceutical company or are "transmitters, but with 11 years of experience in pharmacy". Regarding the professional experience - the performance in the defined groups is almost equal - about 5 years (29.6% - n=21), at ≥ 10 , as well as with 15 years of professional experience, 32.4% (total n=46).

Among the students studying medicine over half are 4, 5 and 6 courses 52.4% (n=76), the rest are in pre-clinical and propaedeutic 1, 2 and 3 courses (n=69), and from the whole group 15.9% (n=23) are students of dental medicine. Of the pharmacy students, 82.6% (n=52) study pharmacy, 17.5% (n=11) are assistant pharmacists, and logically, most students are in the 18-25 age group - 93% (n=194); a total of 14 students over the age of 25 have joined, which corresponds to the age structure of the student community at the university.

▪ Awareness of CAM-definition, individual methods and systems; sources of information related to CAM.

The professionals' awareness is the starting point of this study. To the question "*Are you familiar with the concept of "complementary and alternative medicine (CAM)"*", 24% (n = 45) in total in the group of professionals answered positively, but 71% (n = 131) preferred to indicate the answer "I need more information".

The same question was answered positively by students in 28% (n = 58) of the respondents, as among the medical students 32.4% (n=47) and among the pharmacy students 17.5% (n = 11). At the same time 57% (n= 18) have chosen to indicate that "they need more information". See the summarized responses of the two groups (Figures 6 and 7).

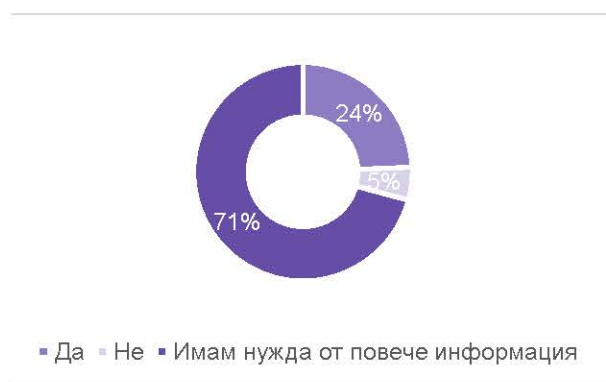
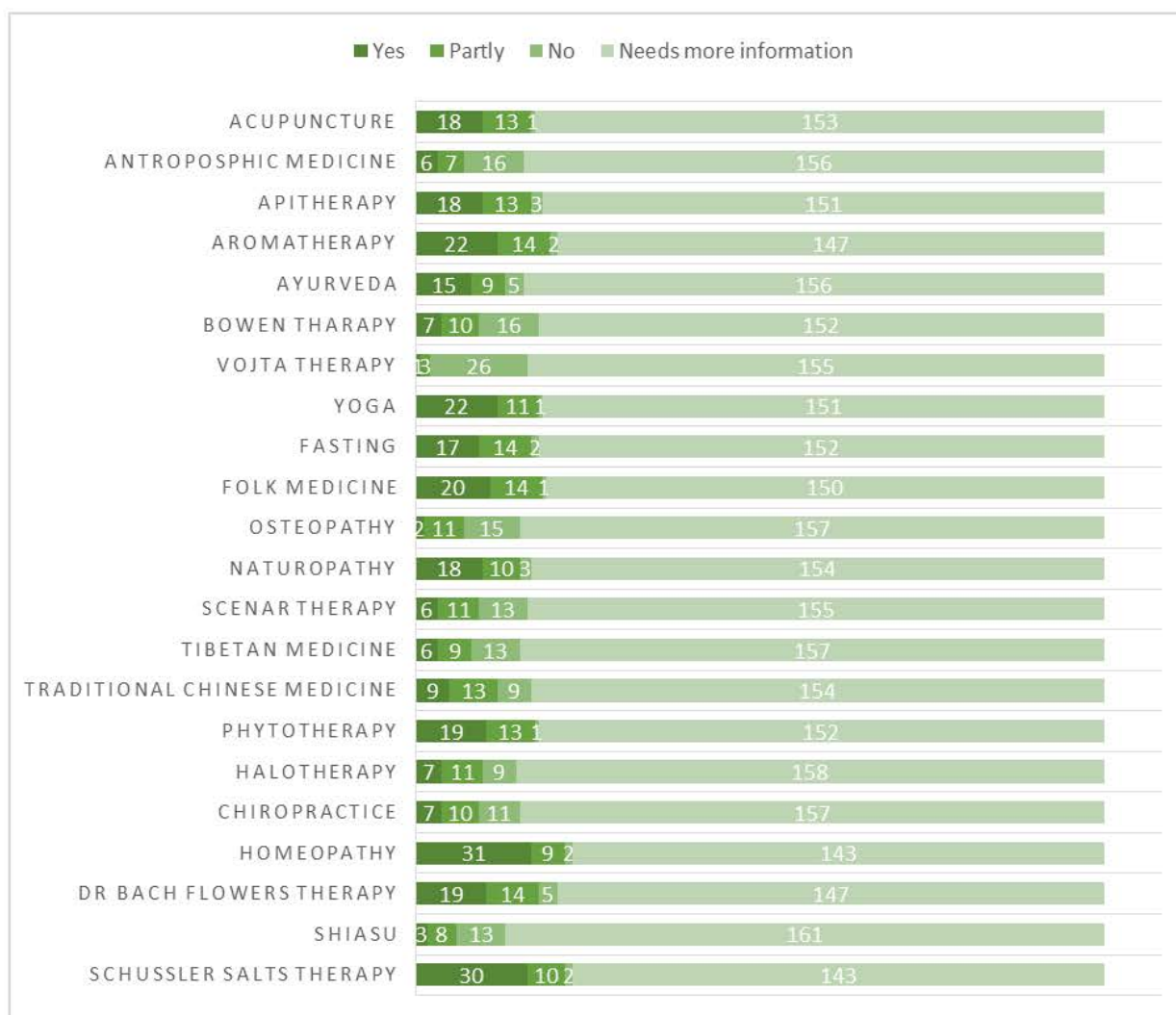


Figure 6. Summarized answers of the professionals to the question: *Are you familiar with the concept of "complementary and alternative medicine" (CAM) ?*, (n = 185) [Answers: Yes - 24.2% (n = 45); No - 4.8% (n = 9); I need more information - 71% (n = 131)]



Figure 7. Summary of students' answers to the question: *Are you familiar with the concept of "complementary and alternative medicine" (CAM) ?*, (n = 208) [Answers: Yes - 28% (n = 58); No - 15% (n = 32); I need more information - 57% (n = 118)]

The participants in the study were provided with a definition of CAM: "CAM refers to a group of systems and practices considered outside the field of conventional medicine that are used to treat diseases and / or to promote health and prevent diseases".



Фигура 8. Awareness of methods and systems in the group of the **PROFESSIONALS** - family doctors, pharmacists and assistant-pharmacists (n=185) [results in numbers answered according to the scale: Yes, Partly, No, I need more information]

In a follow-up question (*How familiar are you with the following CAM methods / systems?*), Participants were asked are they informed about concrete CAM-methods and systems, listed in alphabetical order according to the European CAMbrella framework [EU, CAMbrella, 2010-2012]; other nationally popular methods have been added, without claiming to be exhaustive.

The following 22 CAM methods and systems were listed in the questionnaire in alphabetical order: acupuncture, anthroposophic medicine, apitherapy (treatment with honey and its products), aromatherapy, Ayurveda, Bowen therapy, Voita therapy, yoga, fasting, folk medicine, osteopathy, naturopathy, Scenar therapy, Tibetan medicine, Traditional Chinese Medicine (TCM), phytotherapy (herbal treatment), chiropractic (manual therapy), homeopathy, shiatsu (Japanese traditional therapy), Schussler's biochemical therapy, flower therapy (Dr. Bach's method), halotherapy (salt therapy). It was possible to indicate other CAM-methods with which the respondents are familiar, such as art therapy, animal therapy, mineral therapy, diet therapy.

Awareness was rated on a scale of "*Yes, Partly, No, I need more information*". More than two thirds of the professionals' group and more than half of the students' group indicated that they needed more information about CAM. Further, these responses are differentiated within the provided list of the 22 CAM methods or systems (See Figures 8 and 9).

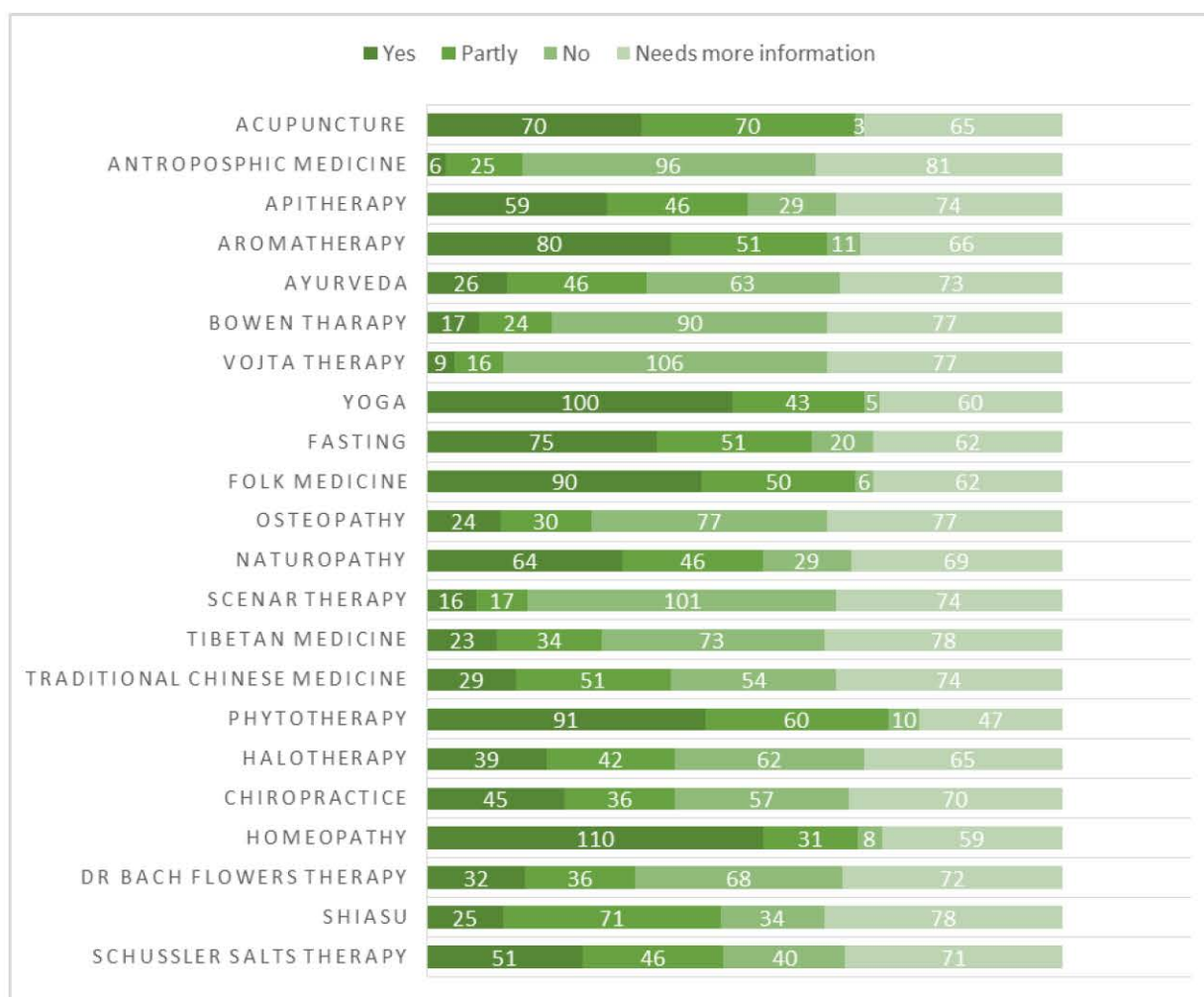


Figure 9. Awareness of methods and systems in the group of the **STUDENTS** (n = 208), specialties: medicine, dentistry, pharmacy, assistant-pharmacists) [results in numbers answered according to the scale: Yes, Partly, No, I need more information]

A total of 32 people from the professionals and 37 from the students responded to the opportunity to add popular methods/systems in terms of their personal and / or professional experience and awareness. The narratives of the four groups are summarized in Table 3. below, which allows for a comparative analysis made in the discussion part of the dissertation.

Table 3. Additional to the CAM methods / systems indicated in the questionnaire, added by the participants on the basis of their awareness

Family Doctors - 23 answers	Pharmacists - 9 answers
<ul style="list-style-type: none"> • Musicotherapy; • Diet - keto diet, rainbow diet etc. (5 times); treatment and ketodiet in cancer, but together with traditional therapy; • Thalasootherapy (2); • Supplements - although they can be considered as part of diet therapy, they are widely used - mushrooms, green tea, curcumin and various vitamins; • Animalotherapy - with horses, dolphins (2); 	<ul style="list-style-type: none"> • Therapy with dolphins (2); • Arttherapy (2), Animalotherapy (2); • Yes, they are very interesting, for some products I understand from customers; • Hypotherapy; • Musicotherapy; • Therapy with minerals; • Diet;

<ul style="list-style-type: none"> • Fasting in Lidiya Kovacheva method (applied by dr Emilova) (2); sayondji massage (2); • The Bulgarian folk medicine is reviving; • The Bulgarian folk medicine is unique, going out in nature is a kind of prevention and therapy; foresttherapy; • Hypnosis therapy; • Ozone therapy; • TES - method, emotional freedom techniques (3 times, from patients); • Minerals therapy. 	<ul style="list-style-type: none"> • These methods are very interesting for me as a pharmacist, there are others such as - treatment in nature, sea treatment and others.
Students in medicine - 24 answers	Students in pharmacy - 13 answers
<ul style="list-style-type: none"> • Diet therapy (2); • I am not familiar with others (3); • Animal therapy (2); • Library therapy - with books; book therapy (2); • Homeopathy, flower therapy, phytotherapy; • I don't know the exact term, but all the nonsense with crystals, energy pyramids, water energy, etc. • Laughter therapy; • Reiki; • TES - technique for emotional freedom, Silva Method; • Meditation; • Art therapy (3); • Music therapy (2); • I am not familiar with others; • Mineral therapy (2); • I am familiar with mineral therapy, having touched the literature of Ivan Mitev; • Applied kinesiology. 	<ul style="list-style-type: none"> • Diet therapy (2); • Bioresonans therapy (of course lie) and irisodiagnostics (Petar Dimkov); • Crystaltherapy; • I am not familiar with others methods (4); • Therapy in the mountains; in the forest/nature; • Art therapy (3), Minerals therapy (2), • Animal therapy (2); • Musictherapy; • I am familiar with some of them, also with occupational therapy.

The next question was „Which sources of information related to CAM do you consider useful and reliable?“ (in a scale from „Yes, useful and reliable; Partly useful and reliable; No, they are not useful and reliable, *uuu* I do not know if they are useful and reliable“). Respondents had the opportunity to evaluate the following categories in terms of usefulness and reliability: scientific congresses and conferences, scientific publication, knowledge and experience exchange among colleagues, social media (internet sources), online courses/webinars, practical seminars, lectures and seminars, included in the curriculum; study literature (textbooks, handbooks), postgraduate courses (Table 4). From the results here and from the Dynamic Delphi study, conclusions are made about what is most adequate to be offered in terms of content and methodology in terms of disciplines and courses for students and professionals.

Table 4. Comparative table of summary data regarding students' and professionals' answers on "Sources of information related to CAM - usefulness and reliability" [on a scale of 1) "Yes, useful and reliable; 2) Partly useful and reliable; 3) No, they are not useful and reliable, up to 4) I can not judge whether they are useful and reliable "] (Chi-squared test, p-value <0.05)

Sources of information regarding CAM	Professional Numbers (n=185)				Students Numbers (n=208)				p value
	Yes % (n)	Partly % (n)	No % (n)	Do not know % (n)	Yes % (n)	Partly % (n)	No % (n)	Do not know % (n)	
Scientific congresses and conferences	75% (138)	24% (45)	0.5% (1)	0.5% (1)	57% (119)	29% (62)	6% (12)	7% (15)	0,72
Scientific publication	75% (130)	29% (54)	0.5% (1)	0	67% (139)	29% (61)	3% (6)	0.5% (1)	0,94
Knowledge and experience exchange among colleagues	44% (82)	52% (96)	0.5% (1)	6	51% (106)	27% (56)	9% (18)	13% (28)	0,45
Social media (internet sources)	15% (28)	66% (122)	4% (7)	15% (28)	22% (45)	41% (85)	23% (47)	15% (31)	0,60
Online courses/ webinars	81% (149)	18% (33)	0.5% (1)	0.5% (1)	60% (125)	25% (51)	13% (27)	2% (5)	0,20
Practical seminars	94% (173)	5% (10)	1% (2)	0	74% (154)	15% (32)	9% (18)	2% (4)	0,64
Lectures and seminars, included in the curriculum	48% (88)	6% (12)	46% (85)	0	75% (153)	14% (29)	11% (23)	1% (3)	0,77
Study literature (textbooks, handbooks)	48% (88)	6% (12)	46% (85)	0	77% (161)	13% (27)	8% (17)	1% (3)	0,75
Postgraduate courses	94% (174)	5% (9)	1% (2)	0	50% (105)	16% (33)	15% (30)	19% (40)	0,30

The respondents were given the opportunity to recommend specific trainings (Table 5) related to CAM, as well as to add comments that they consider useful, important and would help us to better understand the answers of the participants in the section "Awareness of CAM-methods". The most supported among professionals are the courses of the European School of Clinical Homeopathy, the Academy of Schussler Therapy and Naturopathy, elective discipline in homeopathy for students (See Table 5).

Table 5. Additional specific trainings related to CAM on the basis of their information and experience – narratives

Pharmacists - 12 answers	Family doctors - 16 answers
<ul style="list-style-type: none"> Online postgraduate courses to work with homeopathic products, Schussler salts, aromatherapy, while providing pharmaceutical care (9); Postgraduate trainings in the platform Credoweb- I recommend it. After the training, materials and tests are given, respectively points and certificates (2); I am Schussler salts therapies and I recommend the academies and courses that train in this direction. At the moment starts the new cycle off seminars on Schussler therapy (14-15.09.21). 	<ul style="list-style-type: none"> Seminars; Online courses (very relevant in COVID situation); Course (in modules); European school in clinical homeopathy (8); Schussler salts and naturopathy Academy (4); <p>Centre for training and development of homeopathy (ЦОПХ in Bulgarian).</p>

Students in medicine - 31 answers	Students in pharmacy - 14 answers
<ul style="list-style-type: none"> • <i>Yes I would recommend (2); Yes!!!, but I did not attend and do not know if there are such (3).</i> • <i>I recommend having free electives in Schussler therapy, Ayurveda, homeopathy;</i> • <i>I consider it a good option to add such trainings as optional subjects.</i> • <i>I recommend Scenar and all the other types of sources listed above (въпрос 2).</i> • <i>Introductory course in homeopathy;</i> • <i>There is elective in phytotherapy I would attend;</i> • <i>Flower therapy, homeopathy (2), apitherapy;</i> • <i>I would attend phytotherapy course (4).</i> • <i>I recommend elective in acupuncture, Traditional Chinese medicine, Tibetan medicine.</i> • <i>I would not recommend;</i> • <i>I would attend reiki; hypnosis;</i> • <i>I would attend free elective in: Ayurveda; Tibetan medicine; Flower therapy of dr Bach; Аюрведа; Тибетска медицина; Цветолечение по метода на Бах; Traditional Chinese medicine; Chiropractic;</i> • <i>Disciplines other than the knowledge of evidence-based medicine should not be studied.</i> • <i>Practical seminars and experience exchange with colleagues;</i> • <i>There are yoga classes at the university in which I have participated and I am satisfied, although in order for all these things to take effect, their conditions for implementation must be at a high level, such as a bright and airy, clean room with fragrant candles to hold yoga, not the gym and the dust in it. It doesn't have to be just that. But I am very FOR learning and advancing in alternative medicine. I read a lot about diets and the right and quality lifestyle, for one day as a doctor I can combine traditional with alternative medicine for greater effect. I would be happy if there is an elective course that will teach us the beneficial properties of herbs and teas and nutritional supplements that are used to prevent a number of diseases, as well as medicine that is practiced in the Eastern world. I would recommend all types of courses;</i> • <i>Free elective for CAM in general;</i> • <i>Tropical Medicine.</i> 	<ul style="list-style-type: none"> • <i>Homeopathy course;</i> • <i>I think it is not superfluous to join the curriculum, because that is the only way they will be taught;</i> • <i>Bulgarian folk medicine, Chinese medicine, acupuncture and acupressure. I am against homeopathy courses;</i> • <i>Courses, electives etc.;</i> • <i>For me, online courses, scientific congresses or postgraduate trainings would be of interest.</i> • <i>Elective in homeopathy;</i> • <i>I did not attend (3);</i> • <i>It would be useful to have a workshop or seminar in which the concept of the respective therapy is presented and applied in practice as much as possible;</i> • <i>Free elective disciplines (3);</i> • <i>I am not familiar;</i> • <i>It would be useful to have trainings of the type of elective disciplines, postgraduate trainings as well.</i>

Narratives in the section: „Awareness of CAM-definition“

In the field formatted as an opportunity for open answers / comments (If you wish, please add comments that you find useful, important and would help us better understand your answers in Part One "Awareness of CAM methods") are received the following responses, grouped below.

The following answers were received in the group of professionals:

Family doctors (7 answers)

- *Patients are constantly asking about different CAM methods;*
- *Online postgraduate courses are a good option and are organized as part of our specialization;*
- *It is good to have courses that are not "sterile", only theoretical presentations, it is important to have cases, clinical experience, and interactivity;*
- *This is an area where we need information - the basics, but also innovations;*
- *We are mainly informed by our patients about some methods, which is good, but often they do not share at the beginning. Of course, a good family doctor is good when the patients are sharing all the information, not numbers of patients;*
- *In the fourth wave of COVID-19, online training is becoming a very convenient and safe way to maintain qualifications. We have already learned to communicate through social media;*
- *In times of a pandemic, online courses are a very good option for maintaining qualifications.*

Pharmacists and assistant-pharmacists (8 answers)

- *These are very relevant topics because they are related to environmentally friendly life and ecology;*
- *Attend regular training.*
- *I am Schussler and Bach's therapist. At the pharmacy, patients ask about these therapies every day, they also look for homeopathic medicines, which is the reason for my interest in being able to answer their questions.*
- *I have no additions to what is written.*
- *Some of the methods we cannot teach, but it is good to know about them.*
- *As a pharmacist, I rarely have to recommend CAM methods as therapy, we mainly recommend medications or products needed for prevention or treatment. However, I think it is important to know about them (what they are and how they are used).*
- *We are in the fourth wave of Covid and online courses are very relevant. It would be very nice and useful to do such a course for CAM, which is part of our continuing education and brings us points.*
- *We need up-to-date information.*

The following answers were received in the group of the students:

Students of medicine and dentistry (9 answers)

- *More and more people around me use some methods of CAM and I am convinced that future doctors need to know what CAM is, if they want to practice or recommend.*
- *Upon graduation, I would enroll in such a specialization course (2).*
- *I would like to be able to answer some of those mentioned in item 2 at the same time as "partly" and "I need more information"*
- *I do not support or "believe" in homeopathy and Schussler therapy. I would only trust well-designed research. I am not familiar enough with other topics, but if there are well-done studies, I would get acquainted and decide whether to use them.*
- *This is the first one I visit;*
- *I have a relative (doctor) who uses acupuncture and yoga.*

- *I would like to join an apitherapy course if the university organizes one, I learned here about these methods.*

Pharmacy students and assistant pharmacists (5 answers)

- *CAM should be studied in our basic training course.*
- *For the first time I heard about KAM at our symposium on the occasion of the 60th anniversary of MU-Varna, it is interesting.*
- *Yes - in part - I've heard but I don't know what it is or at least not completely.*
- *I believe that only scientific data and publications after studies and tests can be considered reliable sources. I do not consider information on the Internet or online courses that is not conducted by medical professionals to be reliable. In addition, I believe that all kinds of training on medical topics should be conducted by specialists with higher education.*
- *I have heard of alternative medicine, but I do not know what is complementary. And I don't think they're as effective as traditional treatments, but rather the placebo effect. But I may not have enough information.*

▪ Attitudes and behaviors related to CAM:

The attitudes are strong behavioral determinants, so in this part of the study the focus is on "attitudes, behaviors related to CAM in individual and family terms" (See Figures 10, 11.; for students Figures 12, 13). For the group of professionals, the study is expanding in the direction of "recommendations to patients related to CAM in the context of medical and pharmaceutical care."

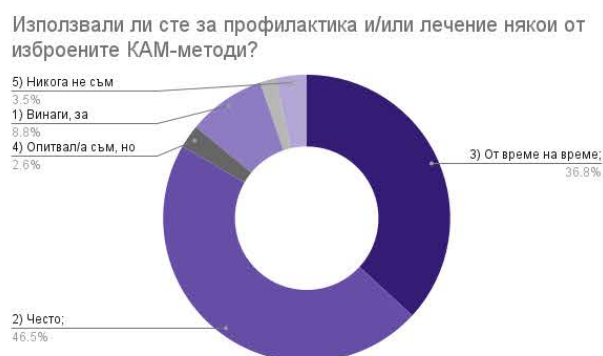


Figure 10. Answers of the family doctors to the question: *Have you used for prevention and / or treatment some of the already listed KAM-methods?*, (n = 114) [Answers: 1) 8.8% (n=10); 2) 46.5% (n=53); 3) 36.8% (n=42); 4) 2.6% (n=3) ; 5) 3.5% (n=4); 6) 1.8% (n=2)].

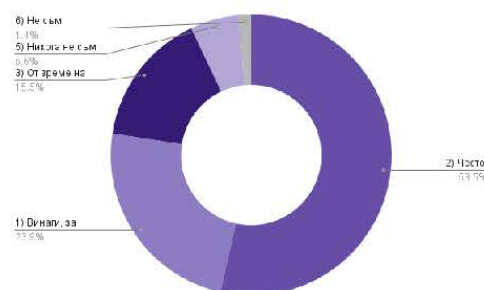


Figure 11. Answers of the pharmacists to the question: *Have you used for prevention and / or treatment some of the already listed KAM-methods?*, (n=71) [Answers: 1) 23.9% (n=17); 2) 53.5% (n=38); 3) 15.5% (n=11); 4) 0% (n=0) ; 5) 5.6% (n=4); 6) 1.5% (n=1)].

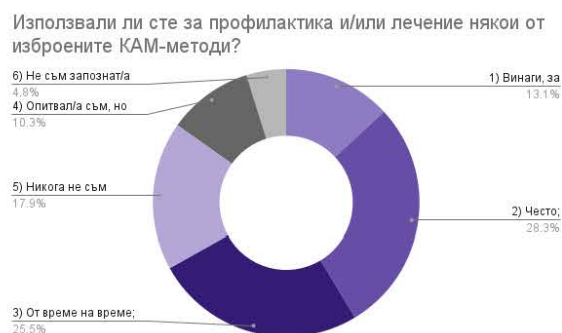


Figure 12. Answers of the medical students to the question: *Have you used for prevention and / or treatment some of the already mentioned KAM-methods?*, (n = 145) [Answers: 1) 13.1% (n=19); 2) 28.3% (n=41); 3) 25.5% (n=37); 4) 10.3% (n=15); 5) 17.9% (n=26); 6) 4.8% (n=7)].

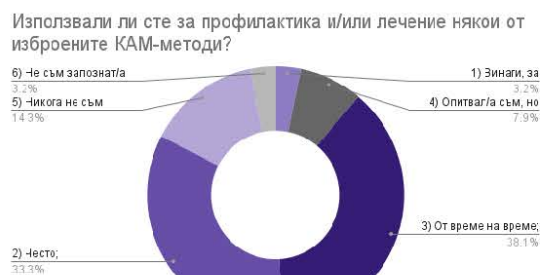


Figure 13. Answers of the medical students to the question: *Have you used for prevention and / or treatment some of the already mentioned KAM-methods?*, (n = 63) [Answers: 1) 3.2% (n=2); 2) 33.3% (n=21); 3) 38.1% (n=24); 4) 7.9% (n=5); 5) 14.3% (n=9); 6) 3.2% (n=2)].

If the respondents answer affirmatively to the question "*Have you used for prevention and / or treatment some of the already listed KAM-methods?*" They have the opportunity to continue in the form and specify which methods / systems they use in the standard alphabetical list of the already presented 22 CAM-modes according to the following six-levels scale: 1) *Always, for prevention and when they get sick*; 2) *Often*; 3) *From time to time*; 4) *They have tried, but no effect*; 5) *Never tried*; 6) *They are not familiar with the methods at all and therefore have not tried*. Due to the significant amount of data collected through the four questionnaires developed for the four target groups, only some highlights are graphically presented here, and the collected data will be the basis for future research specifically for each of the methods / systems (See Figures 14 to 25).

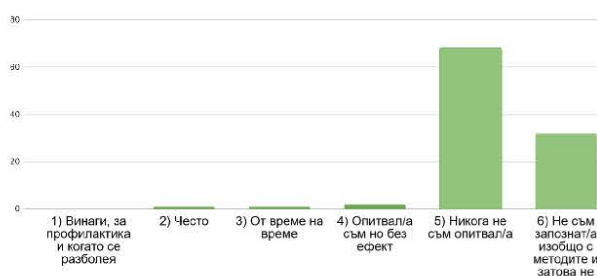


Figure 14. General practitioners' answers the question: *Have you used **anthroposophic medicine** for prevention and / or treatment?*, (n=105) [Answers: 1) n=0; 2) n=1; 3) n=1; 4) n=3; 5) 60% (n=68); 6) 36% (n=32)].

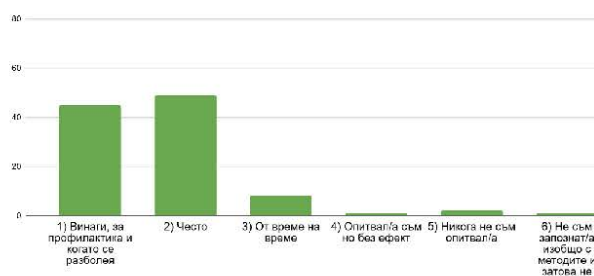


Figure 15. General practitioners' answers the question: *Have you used **homeopathy** for prevention and / or treatment?*, (n=105) [Answers: 1) 42.8% (n=45); 2) 46.6% (n=49); 3) 6.6% (n=7); 4) 1% (n=1) ; 5) 2% (n=2); 6) 1% (n=1)].

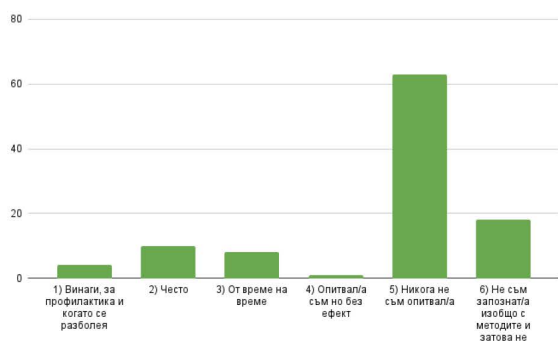


Figure 16. General practitioners' answers the question: *Have you used **naturopathy** for prevention and / or treatment?* [Answers: 1) (n=4); 2) 9.5% (n=10); 3) 7.6% (n=8); 4) (n=1); 5) 61% (n=64); 6) 17% (n=18)].

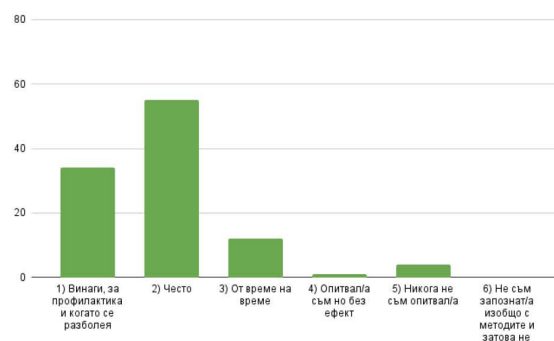


Figure 17. General practitioners' answers the question: *Have you used **Schussler salts method** for prevention and / or treatment?*, (n=105) [Answers: 1) 32.4% (n=34); 2) 52.4% (n=55); 3) 10.5% (n=11); 4) 1% (n=1); 5) 3.8% (n=4); 6) (n=0)].

In the group of the pharmacists 87% (n = 62) use some of the CAM methods for their personal health. The results are similar to those of the general practitioners - 92% (n = 105) use some CAM, highlights of the data are presented below. Almost the same CAM-modalities were selected for comparison with the family physicians (Figures 18, 19, 20, 21).

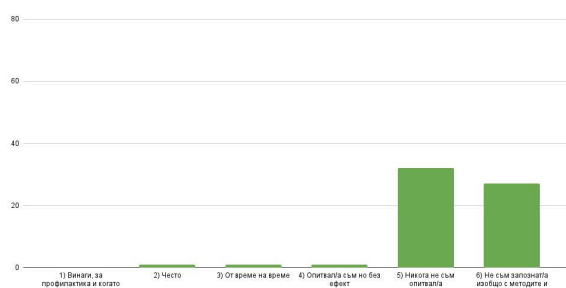


Figure 18. Pharmacists' answers to the question: *Have you used **anthroposophic medicine** for prevention and / or treatment?* (n=62) [Answers: 1) n=0; 2) n=0; 3) n=1; 4) n=2; 5) 38.7% (n=24); 6) 58% (n=36)].

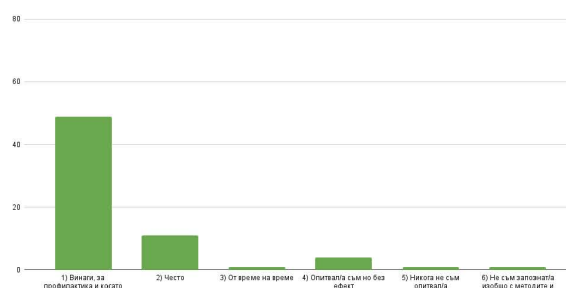


Figure 19. Pharmacists' answers to the question: *Have you used **homeopathy** for prevention and / or treatment?* (n=63) [Answers: 1) 66.7% (n=42); 2) 23.8% (n=15); 3) 3.2% (n=2); 4) 3.2% (n=2); 5) 3.1% (n=2); 6) (n=0)].

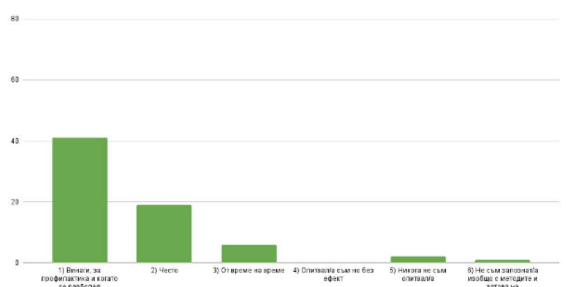


Figure 20. Pharmacists' answers to the question: *Have you used **phytotherapy** for prevention and / or treatment?* (n=62) [Answers: 1) 62.9% (n=39); 2) 29% (n=18); 3) 6.5% (n=4); 4) (n=0); 5) (n=1); 6) (n=0)].

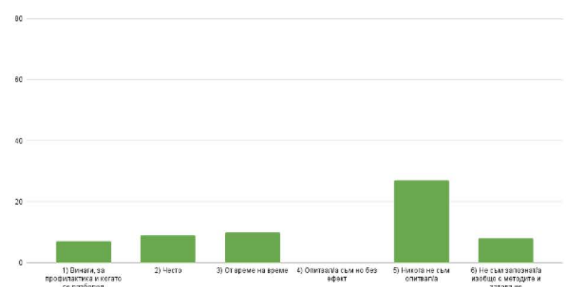


Figure 21. Pharmacists' answers to the question: *Have you used **naturopathy** for prevention and / or treatment?* (n=61) [Answers: 1) 13.1% (n=8); 2) 9.8% (n=6); 3) 4.9% (n=3); 4) (n=1); 5) 50.8% (n=31); 6) 19.7% (n=12)].

In the group of the students in medicine and dentistry about 74.5% (n = 108) use some of the CAM methods for their personal health. The most widely used methods are phytotherapy, homeopathy, apitherapy, folk medicine (narodna medicina). Anthroposophical medicine, Tibetan medicine, methods and systems of the Eastern medicine are also unknown and therefore not applied. Highlights from the data are presented below (Figures 22-23).

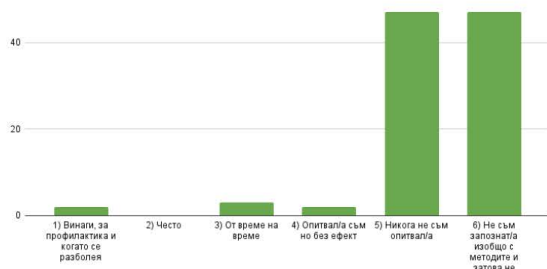


Figure 22. Medical students' answers to the question: *Have you used **anthroposophic medicine** for prevention and / or treatment?* (n=102) [Answers: 1) (n=2); 2) (n=0); 3) 2.9% (n=3); 4) (n=2) ; 5) 46% (n=47); 6) 47% (n=48)].

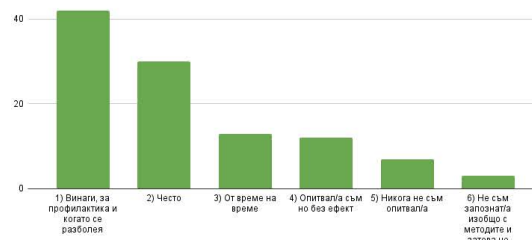


Figure 23. Medical students' answers to the question: *Have you used **homeopathy** for prevention and / or treatment?* (n=108) [Answers: 1) 38.9% (n=42); 2) 27.8% (n=30); 3) 12.7% (n=14); 4) 11.1% (n=12) ; 5) 6.5% (n=7); 6) 3%(n=3)].

In the group of the students studying pharmacy about 82.5% (n = 52) use some of the CAM methods for their personal health. The results are similar for the medical students, with a small part of the data presented below for comparison (Figures 24-25).

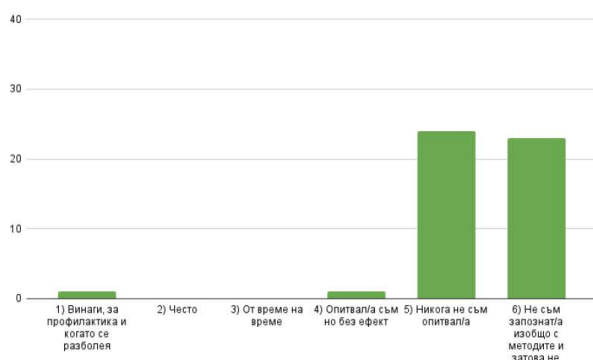


Figure 24. Pharmacy students' answers to the question: *Have you used **anthroposophic medicine** for prevention and / or treatment?* (n=52) [Answers: 1) (n=1); 2) (n=0); 3) (n=0); 4) (n=1); 5) 46% (n=24); 6) 44% (n=23)].

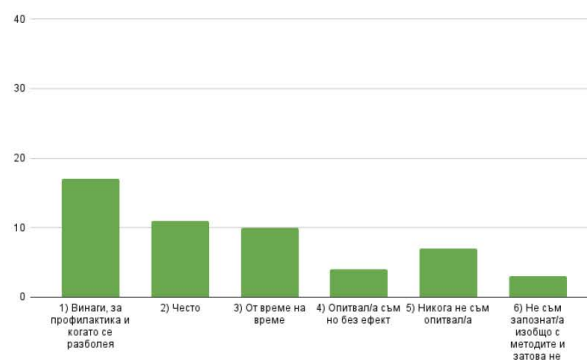


Figure 25. Pharmacy students' answers to the question: *Have you used **homeopathy** for prevention and / or treatment?* (n=50) [Answers: 1) 34% (n=17); 2) 22% (n=11); 3) 16% (n=8); 4) 8% (n=4) ; 5) 14% (n=7); 6) 6% (n=3)].

A similar question in the same sequence and scale was asked regarding family use: "Are any of the listed CAM methods / systems used in your family for prevention and / or treatment?" - to the professionals (Figures 26, 27) and to students (Figures 28, 29).

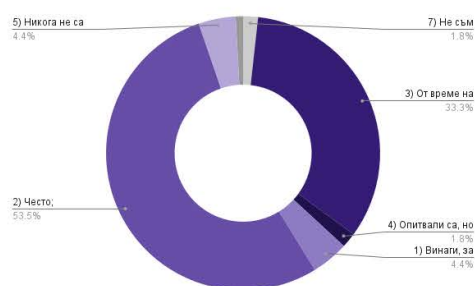


Figure 26. General practitioners' answers to the question: *Are any of the listed CAM methods / systems used in your family for prevention and / or treatment?*, (n=114) [Answers: 1) 4.4% (n=5); 2) 53.5% (n=61); 3) 33.3% (n=38); 4) 1.8% (n=2); 5) 4.4% (n=5); 6) 0.9% (n=1); 7) 1.8% (2)]

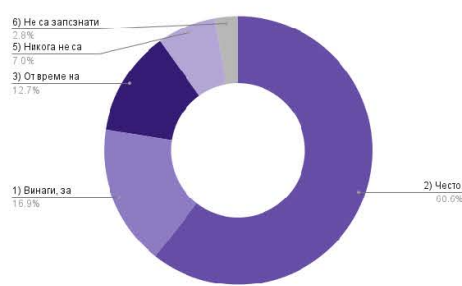


Figure 27. Pharmacists' answers to the question: *Are any of the listed CAM methods / systems used in your family for prevention and / or treatment?*, (n=71) [Answers: 1) 16.9% (n=12); 2) 60.6% (n=43); 3) 12.7% (n=9); 4) 1.8% (n=2); 5) 7% (n=5); 6) 2.8% (n=2)]

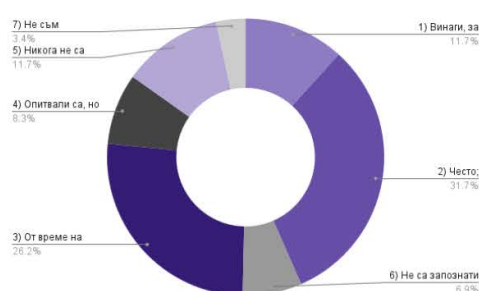


Figure 28. Medical students' answers to the question: *Are any of the listed CAM methods / systems used in your family for prevention and / or treatment?*, (n=145) [Answers: 1) 11.7% (n=17); 2) 31.5% (n=46); 3) 26.7% (n=39); 4) 8.2% (n=12); 5) 11.6% (n=17); 6) 6.8% (n=10); 7) 5% (3.7)]

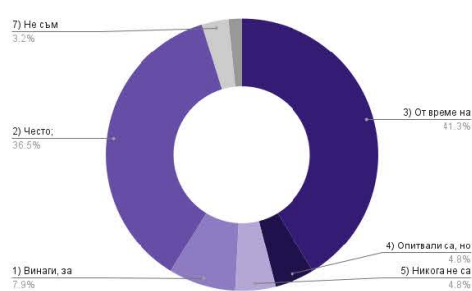


Figure 29. Pharmacy students' answers to the question: *Are any of the listed CAM methods / systems used in your family for prevention and / or treatment?*, (n=63) [Answers: 1) 7.9% (n=5); 2) 36.5% (n=23); 3) 41.3% (n=26); 4) 4.8% (n=3); 5) 4.8% (n=3); 6) 1.6% (n=1); 7) 3.2% (2)]

In this part the questionnaires differ, as the professionals are asked the question "*Do you recommend to your patients / clients the following CAM-methods for prevention and / or treatment?*", Respectively for doctors in the context of medical care, and for pharmacists in the context of pharmaceutical care - recommendation of over-the-counter medicines, phytoproducts and food supplements. Here are some highlights: 88% (n = 100) of the the doctors recommend herbal medicine; 90% (n = 103) recommend homeopathic therapy, and one respondent - strongly does not recommend homeopathy; 89% (n = 102) often and sometimes recommend Schussler's salts and others. For pharmacists, the recommendations are related to food supplements, phytotherapeutic products and herbal preparations, homeopathic products, Schussler's salts.

Narratives in the section: „Attitudes and behaviours related to CAM“: The respondents were given the opportunity for additional comments that would be useful, important and would help to understand and analyze the answers in the section "Attitudes and behavior related to CAM".

The following answers were received in the group of professionals:

Family doctors (11 answers)

- *To recommend, there must be evidence of efficacy and lack of interaction with the main therapy. For example, in cancer patients be careful with nutritional supplements and their interaction with chemotherapy. It is also a problem that sometimes patients do not share with me about these supplements.*

- *I am active in the recommendation, but if patients ask me about a complementary or alternative method, we also discuss.*
- *Patients surprise me more and more often with questions about a method I am not familiar with. I need training in this direction, I graduated about 7 years ago..*
- *Schussler's therapy and Dr. Bach's essences, as well as Australian flowers, are great methods of choice.*
- *I recommend depending on the patient, my patients have learned to share and are already informing me when they have tried a CAM method such as massage, homeopathy and others.*
- *I am open to KAM, but there must be common sense and a consultation with a specialist. Even herbal products are not harmless.*
- *There is a need for a seminar on the possibilities of CAM for prevention, treatment of COVID, as well as for dealing with post-Covid syndrome.*
- *I do not have an opinion on some of the methods because I do not know them, I need more information about them, I am interested.*
- *If the patient tells me that he has tried or wants to try any of these methods I read and then recommend or not. More and more patients are asking, especially younger ones and mothers with small children.*
- *No, this is not medicine for me.*
- *KAM is successful in mild respiratory infections, skin diseases, joint pain, and gastrointestinal complaints.*

Pharmacists and assistant-pharmacists (9 answers):

- *Obviously, I have an opinion on very few methods listed. This is because I am either unfamiliar or have no personal impressions. In my opinion, it is not necessary for CAM to be included in the curriculum of students, but rather according to personal attitudes and interests of each of them to have the opportunity for additional information (free electives).*
- *Patients search in pharmacies themselves and we have to explain how they are used.*
- *I have nothing to add.*
- *We recommend mainly products, rarely methods as such.*
- *Naturopathy (this is the international term) is synonymous with folk medicine - this is the Bulgarian term.*
- *In the pharmacy I recommend only CAM products (homeopathic remedies, Schussler's salts, Dr. Bach's drops, phytoproducts, some ayurveda products). We often give the opportunity to doctors or other health professionals to leave business cards and advertisements with CAM methods, which they provide in their practices and then we have to explain to clients. The very fact that we have agreed to leave advertising materials is already a kind of support and recommendation.*
- *We mainly recommend the products.*
- *We recommend products, not practices such as medical care.*
- *In the context of pharmaceutical care, we can only recommend products.*

The following answers were received in the group of the students:

Students in medicine and dentistry (11 answers)

- *I would trust only an experienced specialist in his CAM field when it comes to CAM and I respect scientifically proven approaches to treatment.*
- *KAM does not attract me, mostly due to the lack of science in most of the methods.*
- *The attitudes in my family and friends are positive, but we do not have information on some methods. I think there is a need for training modules to theoretically cover this area of medicine.*
- *We like biometrics for treatment.*

- *My attitude is positive, but I have not studied this area.*
- *No evidence of benefits.*
- *Overestimated methods that worsen the condition of patients. After "prevention" and / or "treatment", the patient either has irreversible bad consequences for his health (which most likely would not have happened at all if timely treatment with conventional medicine had been started), or aggressive therapy with the same is required. Logically, this aggressive therapy intensifies / makes more frequent adverse drug reactions. I find them useful only as a complementary therapy to the main treatment in order to support the patients, not to cure the disease.*
- *My grandfather (doctor) was taught acupuncture, my grandmother (also a doctor) was also taught.*
- *I believe that it is necessary to include in the curriculum certain disciplines to acquaint students with alternative medicine. This would give a greater overview of the understanding and analysis of different diseases.*
- *There is no scientific evidence to have a curative effect. Rather a placebo effect.*

Pharmacy students and assistant pharmacists (11 answers)

- *This study is a great idea!*
- *We have been treated with homeopathy for years, but I did not know that it is part of KAM.*
- *Most people are unfamiliar with methods that are not typical of our latitudes, including those with medical education (the specialists). They do not find it necessary and interesting to enrich what they already know works and do not believe that other schools and methods are relevant.*
- *I'm not sure if my relatives are familiar with some of the methods, but I noted that they are not.*
- *In my opinion, the effect of the treatment is very much related to the belief in its effectiveness.*
- *I tried homeopathy, but the treatment was ineffective.*
- *More training on this topic is needed, as it is not particularly represented in the training course at the medical universities.*

▪ Interests and need for training in the field of CAM

The logic of the investigation requires a study of the target groups' opinions regarding the need for training in the field of CAM, both as part of university education and as postgraduate qualifications, certifications and others. In this part of the survey there are differences, depending on who the questions are addressed to, so the reporting of the results is separate for each of the two groups (Table 6).

Respondents were asked to express their agreement / disagreement with twelve statements / opinions, which are specific to the target group. The assessment is on a four-point scale (*fully agree; agree partly; fully disagree; I have no opinion*).

Additional information related to previous training was sought: *"Have you been trained and / or qualified for CAM or some of the CAM methods / systems so far?"* (Possible "Yes / No" answers, as well as the possibility of open question clarification). From the group of professionals: among doctors 84.2% (n = 96) answered positively, and some indicated the specific courses and methods they were trained in, in the part are sharing comments, and among pharmacists 63.4% (n = 45) responded positively, comments were added later.

Table 6. Comparative summary of the statements of the professionals (P) and the students (S) on CAM-related training -
"To what extent do you agree with the following statements?" Please note as follows: 1) Fully agree; 2) Agree partly; 3) Fully disagree;
4) I have no opinion. (Chi-squared test, p-value < 0.05)

Statement		Group	1) Fully agree	2) Agree partly	3) Fully disagree	4) No opinion	p value (*p<0.05)
Professionals (P) (n=185); Students (S) (n=208)	I am interested in complementary and alternative medicine (CAM).	P	92% (171)	7% (12)	0.5% (1)	0.5% (1)	
		S	59% (124)	29% (60)	9% (18)	3% (6)	0.497406
	I need additional training / qualification in the field of CAM.	P	95% (176)	3% (6)	1% (1)	1% (2)	
		S	68% (141)	20% (41)	9% (19)	3% (7)	0.632481
	As the responsibilities of the family doctor / pharmacist are many and the working day is extremely busy, I do not have time to qualify in the field of CAM. The study of medicine / pharmacy includes a lot of disciplines, and therefore I believe that it makes no sense to add KAM as an additional discipline (s) to the compulsory subjects.	P	4% (7)	6% (11)	88% (164)	2% (3)	
		S	14% (30)	18% (36)	59% (123)	9% (19)	0.842142
	Despite my great study / professional workload, I am interested in studying CAM and CAM methods / systems.	P	95% (176)	3% (6)	1% (2)	1% (1)	
		S	61% (127)	24% (49)	12% (25)	3% (7)	0.416684
	University education gives / should give the necessary knowledge about CAM.	P	93% (172)	4% (9)	1% (1)	2% (3)	
		S	35% (72)	19% (40)	33% (69)	13% (27)	0.008217*
	When CAM is integrated into medical / pharmaceutical education, it must be taught scientifically.	P	96% (177)	2% (5)	1% (1)	1% (2)	
		S	75% (155)	18% (38)	5% (10)	0% (0)	0.683208
	From my position as a general practitioner / pharmacist, I believe that integrating CAM into medical education would better prepare future physicians for their upcoming professional tasks. The integration of KAM into the curriculum will contribute to the better training of future doctors / pharmacists.	P	96% (177)	2% (4)	1% (2)	1% (2)	
		S	64% (133)	21% (43)	10% (21)	5% (11)	0.410232
	I think it is appropriate for specialists in postgraduate education to include more information about CAM.	P	94% (174)	3% (6)	2% (3)	1% (2)	
		S	66% (138)	18% (38)	11% (22)	5% (10)	0.705909
	I think it would be useful for me as a general practitioner / pharmacist to be more familiar with the current possibilities of CAM methods for treatment and prevention. I think that it would be useful as a future doctor / pharmacist to be more familiar with the possibilities of CAM methods for treatment and prevention.	P	96% (177)	3% (6)	0.5% (1)	0.5% (1)	
		S	74% (154)	16% (34)	8% (16)	2% (4)	0.618477
	Research in the field of CAM is necessary and should be developed and taught in universities.	P	96% (177)	3% (6)	0.5% (1)	0.5% (1)	
		S	67% (139)	21% (43)	7% (14)	5% (12)	0.490366
	There is a need for more science-based information related to CAM and aimed at the general public and patients. More and more healthy people and patients are seeking advice from me about their illnesses, preferring treatment / prevention with CAM.	P	96% (178)	3% (5)	0.5% (1)	0.5% (1)	
		S	75% (157)	16% (34)	5% (10)	4% (7)	0.738827
	More and more healthy people and patients are seeking advice about their health and their illnesses, preferring prevention / treatment with CAM.	P	94% (174)	4% (7)	1% (2)	1% (2)	
		S	62% (129)	25% (52)	5% (11)	8% (16)	0.601658

From the group of students of medicine and dentistry 66.2% (n = 96) answered positively that during their university education they were trained for CAM or some of the CAM methods / systems; among the students of pharmacy they confirmed training in the area of CAM only 44.4% (n = 28).

It is also possible to specify "Which CAM-methods for prevention and / or treatment you have been trained and / or qualified" in a four-point scale - "Yes", "Partly", "No", "I need more information". The most positive answers ("Yes") were given regarding the trainings in homeopathy, Schussler's therapy and flower therapy.

To the question "Do you support the idea of KAM to be permanently included in the training programs in medicine / pharmacy?" (Possible answers "Yes / No / I have no opinion") 99.1% (n = 113) answered positively among the group of the physicians, only one respondent gave a negative answer. Among the pharmacists, 93.0% (n = 66) support the inclusion of CAM in education with "Yes", while 5.6% (n = 4) have no opinion. Of the medical students, 75.2% (n = 109) answered in the affirmative, and 74.6% (n = 47) studied pharmacy, with 11.1% (n = 7) having no opinion.

Specifically, students were asked: "In your opinion, the disciplines related to CAM are most appropriate to be included in the curriculum through: 1) Regular compulsory discipline; 2) Compulsory elective course (ЗИД); 3) Freely elective discipline (СИД); 4) Other (See Figures 30 and 31). The free answers of the medical students in the paragraph "Others" are interesting: "Exclusively and only for people who have the attitude and inner desire to deal with CAM. Careful selection of skilled and inspiring lecturers, people who can show how IAM works in practice and to inspire us through their personal experience"; In postgraduate education (СДО) such as courses, seminars, congresses; Individual topics to be included in the abstracts, providing an opportunity through additional study through free electives; 5 answers express disagreement with KAM to be included in the curriculum.

There are three answers in the group of students studying pharmacy in "Others" and they are: "I would not want to be involved at all, but if it is inevitable at least to be like free elective, not mandatory"; to be included as a "supplement to the discipline of pharmaceutical care"; "As free elective or integrated into the compulsory disciplines".



Figure 30. Pharmacy students' answers to the question: *In your opinion, the disciplines related to CAM are most appropriate to be included in the curriculum like?* 1) obligatory discipline; 2) obligatory elective discipline; 3) free elective; or 4) other; 2) ЗИД, 3) СИД или 4) Друго; (n=145) [Answers: 1) 4.8% (n=3); 2) 33.3% (n=21); 3) 57.1% (n=36); 4) Other - 4.9% (n=3).

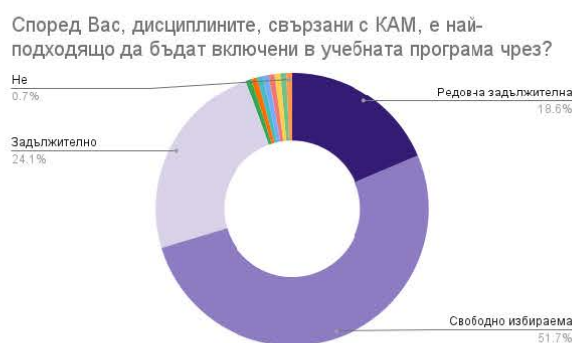


Figure 31. Medical students' answers to the question: *In your opinion, the disciplines related to CAM are most appropriate to be included in the curriculum like?* 1) obligatory discipline; 2) obligatory elective discipline; 3) free elective; or 4) other; (n=145) [Answers: 1) 18.6% (n=27); 2) 24.1% (n=35); 3) 51.7% (n=75); 4) Other - 5.6% (n=8).

▪ **Narratives in the section: „Interests and need for training in the field of CAM“**

Interesting are the comments added by the respondents, which are useful, important and help to interpret the answers in the section "Interests and need for training in the field of CAM". The summarized narratives are presented below.

The following answers were received in the group of professionals:

Family doctors (17 answers):

- *All methods are good to be studied at a basic level, and if the specialist wants to practice he will specialize later after graduation.*
- *To study the whole concept of KAM, not only for the separate methods. You need methodology, not fragmented and partial.*
- *There are periods when a method is "in fashion", as is currently with halotherapy. Many "Salt Rooms" have been built and patients are asking.*
- *All methods need to be studied in a more general way so that we are competent when patients ask us. Patients travel and when they return to us they ask, and we do not always have access or can read in English.*
- *An important issue is that they may not be sought after by patients, but we need to be aware of the topic. Another important thing is that parents are increasingly looking for alternatives to antibiotics for mild respiratory infections, and here homeopathy, folk medicine, Schussler's therapy are very effective, my experience shows.*
- *Even if they are not sought after, they should be studied because they exist and have successful clinical experience.*
- *Complementary methods (CAM) deserve their place in the training of doctors.*
- *Not all methods are sought after, but they need to be studied, because the future lies in the use of all possible methods to deal with COVID.*
- *I am open to everything new in the field of complementary medicine. I would support everything if it helps my patients.*
- *Not all of these methods are in demand, but we doctors need to know, because since they are in demand in Europe and around the world, it will come to us. Patients work abroad, travel, come back and ask about what they have tried somewhere in the world.*
- *My son is studying medicine and education is quite theoretical, he needs more practical guidance.*
- *Some of the methods are sought after, patients ask about them, but I have no information, new and new things (or well-forgotten old ones) are still coming out.*
- *The fact that they are not sought after as methods does not mean that they should not be studied, because these are probably very effective traditional practices for other people and cultures.*
- *Some of the methods are not so sought after because they are not known, but I think they should be studied, for example as a discipline "Introduction to CAM".*
- *Most patients do not share if they have used a CAM method, only if I ask them.*
- *Arttherapy therapy have to be studied.*
- *It is important to have information about each method in order to be competent whether to recommend and for what.*

Pharmacists and assistant-pharmacists (9 answers):

- *There is a need for a thorough knowledge of complementary methods, although not all may be recommended by a pharmacist.*
- *Programs need to be updated. The need for prevention and the needs of patients and demand should also be taken into account.*
- *I have no additions.*
- *Some of the methods are unknown to me and our clients, but should be studied, even if only as an introduction to them during university education.*
- *All CAMs should be studied in order to know as pharmacists and if necessary to give a competent opinion or direction.*
- *Clients in our pharmacy are mostly looking for homeopathy and Schussler's salts, as well as phytoproducts, but everything should be studied in general.*
- *I have read almost everything I know about CAM myself, because it is sought after by clients, but also for my own health. There is a need for courses in this direction.*
- *There is a demand for products from Ayurveda, Chinese medicine, homeopathy and Schussler's salts.*
- *We recommend products not services, but I think every CAM modality should be included in education.*

The following answers were received in the group of the students:**Students in medicine and dentistry (10 answers)**

- *Traditional medicine and CAM for me are two very different fields of development and I would be interested in courses and trainings on them (science-based) only after mastering traditional treatments and I would use them to expand my knowledge and treatment options in my chosen specialty.*
- *CAM is a very interesting field and I would like to gain more knowledge in the field to be competent and to meet the needs of my patients.*
- *In my opinion, it is necessary to introduce more information about CAM in postgraduate education. Our program is extremely loaded with dry information and insufficient clinical experience to be able to assimilate the application of CAM.*
- *It is important to know these methods for the future health professionals.*
- *I think that many of the CAM methods are successful and useful. But since many of my colleagues do not share this view, each proposed practice must be backed up by a lot of research and evidence to attract more students.*
- *Alternative medicine is a scam and does not deserve a place in the curriculum, especially as a compulsory subject. Don't try to push it as a science because it isn't.*
- *We do not need to have mandatory training for things that are not effective. As free electives - yes - for the general literacy of the student. But not to take away from our time to study subjects that treat with proven effectiveness.*
- *I think it would be good to study the subject, but I'm not sure whether to study it as a regular compulsory subject or as an optional subject.*
- *CAM disciplines will be most useful as free electives.*
- *More emphasis should be placed on prevention and how to maintain one's health.*

Pharmacy students and assistant-pharmacists (4 answers)

- *The inclusion of CAM methods in the curriculum for specialty Pharmacy should be freely elective, because most students do not have the attitude to deal with such topics and is generally not for everyone.*
- *It is good to study in general to be useful to clients and to ourselves.*
- *I believe that people are increasingly seeking treatment through CAM and are often engaged in self-medication, which can lead to serious health problems. In my opinion, we, as future pharmacists, should be familiar with such methods of treatment and be able to give adequate advice to patients.*
- *I do not have enough scientifically based information about the effectiveness of CAM methods, so I am not categorical. But maybe they should be included in the curriculum, in terms of being able to inform our future patients which treatments would help and which would be harmful or ineffective.*

▪ Integrative medicine - awareness

Although an officially accepted term, "integrative medicine" is a relatively unknown concept, so the last part of the questionnaire, the same for all target groups, asks the question: "*Are you familiar with the concept of " integrative medicine "?*" (Possible answers "*Yes / No / I need more information*"). Only 7% (n = 8) of physicians, 11.3% (n = 8) of pharmacists; 13.1% (n = 19) of medical students and 7.9% (n = 5) of pharmacy students responded positively. 89.5% of doctors (n = 102) and 85.9% of pharmacists (n = 61) indicated that they needed more information. Summarized for the whole sample, 73.3% (n = 288) of all participants in the survey indicated that they needed more information.

The following definition is provided, in case of negative or declared need for additional information: "*Integrative medicine is individualized and strengthens the empathic doctor-patient relationship, uses in a balanced way all known therapies (conventional and CAM), and all possible approaches to health promotion, based on scientific evidence*".

To the question "*Is there a difference between CAM and integrative medicine?*" - 98.2% (n = 112) of doctors confirmed that there is a difference between the two concepts, and among pharmacists 90.1% (n = 64) understand that there is a difference . Of the students, 89.7% (n = 130) answered positively among physicians and 87.3% (n = 55) among pharmacy students.

▪ Narratives in the section: „Integrative medicine - awareness“

A small part of the respondents took advantage of the opportunity to add comments that further clarify the answers in the section "Integrative medicine - awareness", but the narratives are interesting and help for the subsequent analysis and discussion.

The following answers were received in the group of professionals:

Family doctors (17 answers)

- *It should be studied as an introduction, and the specific topics should be specialized if interested.*
- *Integrative medicine is also relevant to study.*
- *I know about the concept, but mainly as an integration of CAM into healthcare.*

- *From the definition presented here, I understand that integrative medicine is a step forward in uniting healthcare for health, not just disease.*
- *Integrative medicine is a new field for us, but it is entering very quickly and again there is a need to refresh our competencies related to it.*
- *Until today, I thought that there is no difference between CAM and integrative medicine, but from the definition I understand that there is a difference and it is in the direction of including all possible methods for the benefit of our patients.*
- *I understand that integrative medicine unites, it's a good idea, and it needs to be studied.*
- *For me it is a new concept, we did not study it during our medical education.*
- *New ideas need to be studied, medical education is time to open up and not so conservative.*
- *Integrative medicine guarantees scientific evidence.*
- *We need more information in this direction, such as an online course that includes integrative medicine, CAM and prevention.*
- *Integrative medicine as a field is good to be introduced in medical education, otherwise it happens that we learn about new terms at conferences organized outside universities.*
- *I think this idea of integrative medicine is useful and has a future, because it will allow us to work on scientifically sound rules, incl. and for CAM.*
- *I graduated in medicine 2 years ago and I am not familiar with most CAMs, but patients ask.*
- *Integrative medicine should also be a study of the level of awareness during university education, and qualifications and specializations at a later period depending on the interests of the doctor.*
- *I need more information about integrative medicine.*
- *There is more and more information about integrative oncology - application of ketodiet, physical activity, special nutritional supplements as complementary therapy to prescribed chemotherapy.*

Pharmacists and assistant-pharmacists (6 answers)

- *Integrative medicine is unclear to me as a field.*
- *Probably integrative medicine is the one that will unite us with doctors and other professionals to make us more satisfied and useful.*
- *This is the future, but we have not studied at the university, so we need additional qualifications. Perhaps in the form of courses organized in the course of continuing education for master pharmacists from our union.*
- *As continuing training for assistant pharmacists.*
- *To study, it would be good to include in the program of future pharmacists.*
- *Must be included in the curriculum of future pharmacists, as well as for postgraduate qualification.*

The following answers were received in the group of the students:

Students in medicine and dentistry (13 answers)

- *Sounds to me like a balance between the two worlds, which I would appreciate in a specialist if there is this type of knowledge.*
- *Integrative medicine is a new concept for me. I understand from the definition that it is unifying for all methods in favor of health and treatment. If there is such a course I will enroll. I want to study these topics, I need scientific knowledge on the issues of CAM.*
- *I expect to study this discipline in the future.*
- *For the first time I hear what integrative medicine is and I think this is the way to successfully treat patients. In my opinion, the best option is to combine the two methods of treatment and, according to the patient himself, to wash one or another approach or combination of the two. Prevention is important !!!!*
- *This is the future! Naturally. Prevention.*
- *There is a difference between CAM and integrative medicine and it is more appropriate to study integrative medicine as a unifying field and briefly for CAM methods, and who wants to specialize more closely later.*
- *This is the future.*
- *As far as I understand, CAM is part of integrative medicine, which is a much broader concept. I think a discipline of this kind would make it easier for us to learn and deal with clinical cases in the future, as we have a broader view of things.*
- *Integrative medicine includes CAM. Otherwise, it is good that conventional medicine and CAM complement each other.*
- *Now that I think about it, probably free electives should be appropriate as a way to study integrative medicine and CAM as part of it.*
- *As far as I understand, CAM is one of the parts of integrative medicine, but integrative medicine does not always apply CAM therapy.*
- *Integrative medicine uses evidence-based medicine in combination with alternative medicine to give authority and legitimacy to pseudo-scientific and charlatan practices.*

Pharmacy students and assistant pharmacists (8 answers)

- *Obviously integrative medicine unites, but I need more information.*
- *I heard about integrative medicine at our 60-year university conference.*
- *We heard at the lecture on 2.10.2021 on integrative medicine.*
- *Must be studied.*
- *As far as I understand CAM does not include conventional medicine*
- *If there is such a course I will enroll.*
- *It is good to study as a general idea and as specific methods.*
- *I think conventional treatment is expensive enough to use both traditional and alternative methods. Then most patients will not be able to afford it. I prefer conventional medicine because it has a scientific basis and its effectiveness has been proven. For example, if a patient has a heart attack or surgical abdomen, he cannot be cured with homeopathy.*

2.1.2. Analysis and discussion of the questionnaire results

Nationally, there is no public consensus whether integrative medicine and in particular CAM should be included in education in medicine, pharmacy and other health professions, including which CAM methods and how they should be taught. This regional sectional study aimed to assess the educational needs in the field of CAM and integrative medicine by assessing the current knowledge, attitudes and interests of medical and pharmacy students, general practitioners and pharmacists, and assistant pharmacists. Four tools have been developed based on similar studies conducted in Canada, the United States and Germany, cited in the literature. The listing of CAM methods and systems (22 in number, without claiming to be exhaustive) was done deliberately, although this burdens the tool because the educational effect is sought, even through the content of the questionnaire. Many of the therapeutic and prophylactic systems are completely unknown, and patients, healthy individuals (consumers) are looking for them and want to know more about them.

Discussion

Awareness of CAM among the students and the professionals is the starting point of this questionnaire. More than half of the two groups (See Figures 6 and 7) need more information about the CAM concept (71% (n = 131) of professionals and 57% (n = 118), all of whom wished to know the provided CAM definition.

The most popular among professionals is the homeopathy as a CAM system - a total of 40 (out of 185) respondents are familiar - *Yes* or *Partly*. In other treatment methods with "*Yes*" or "*partially*" answered - for Schussler therapy - a total of 41, for aromatherapy - 36, for phytotherapy - 32, for color therapy (according to Dr. Bach) - 33, for acupuncture, for apitherapy - 31 and yoga - 30 respondents among professionals. Students are most informed about homeopathy - a total of 141 (out of 208) respondents are familiar - *Yes* or *partially*, followed by yoga - a total of 144, acupuncture - 140, herbal medicine - 138, aromatherapy - 131, fasting - 126 respondents from students answered with "*Yes*" or "*Yes in part*" (See Figures 8 and 9).

The respondents have the lowest level of information about methods such as Bowen therapy, Vojta therapy, shiatsu, chiropractic - this applies to both groups. They do not have enough information about methods such as Ayurveda, TCM and osteopathy, which are traditional for Eastern cultures, and osteopathy is considered conventional medicine in the United States (Figures 8 and 9).

Regarding the need for more information about CAM in general and for each of the methods there is a significant difference between the groups of professionals and students (in all positions $p < 0.05$), and professionals need more information. This is probably due to the fact that by practicing the professionals want to meet the needs of their patients or clients as much as possible. Probably the awareness of the students is related to the presence of free elective discipline in homeopathy, to which there is a serious interest every year.

The given opportunity to add popular methods in a national context from the point of view of their personal and / or professional experience is indicated by the following CAM: diet therapy; treatment with ketodiet in cancer, but together with traditional therapy; sea treatment (thalassotherapy); nutritional supplements incl. mushrooms, green tea, curcumin and various vitamins; animal therapy - treatment with horses, dolphins; Sayonji massage; forest therapy; mineralotherapy, laughter therapy, Silva method and others (Table 3). The diversity of CAM and the serious awareness, including of the students, can be seen. Professionals share that they learn

some of these methods from their patients or pharmacy clients, which further emphasizes the need to train future and current professionals in this direction.

Regarding **the sources of information about CAM** among students of medicine, pharmacy and professionals, the analysis reveals different patterns of perception in relation to the reliability of the sources of information related to CAM. Regarding the useful and reliable sources of information, the group of professionals placed the greatest weight on practical seminars and postgraduate trainings (both answered "Yes" with 94% / n = 173) (Table 4). Logically, in the professional group "lectures and exercises", as well as "textbooks, manuals" are not the main sources of information. However, for students, exactly lectures (with "Yes" answered by a total of 75% / n = 154) and textbooks (with "Yes" by a total of 77% / n = 161), together with practical seminars (with "Yes" a total of 74% answered / n = 153), were considered useful and reliable (Table 4). It is interesting to note that in both groups "Online courses / webinars" are widely accepted and considered as useful and reliable, with respectively 99% (n = 182) and 85% (n = 176) answers "Yes" and "Partly" by students. It has its weight and participation in scientific congresses / conferences, as well as scientific publications in both groups (Table 4). A comparative analysis between the two groups did not reveal a statistically significant difference (See Table 4, p-value column). The null hypothesis is accepted that there is no difference between the two groups in terms of sources of information. Access to information is rather unlimited, so the choice is important and the educational and training courses offered must offer quality.

With the greatest support among professionals are the courses (such as postgraduate training) of the European School of Clinical Homeopathy, the Academy of Schussler Therapy and Naturopathy, freely elective discipline in homeopathy for students. The Credoweb platform also stands out among pharmacists (See Table 5. for a summary of the narratives). A total of 14 students and 15 professionals benefited from the opportunity to comment on the topic: awareness and sources of information related to CAM. Impressive is the variety of answers and the presence of even a few negative answers due to mistrust and lack of scientific evidence (possibly no information in this direction). An interesting but also sought-after effect is the fact that some of the students perceive the questionnaire as a course, which is part of the research ambition to disseminate the ideas of integrative approaches to health and disease. An important conclusion is that in the conditions of the fourth wave of COVID-19 online trainings become a very convenient and safe way to maintain the qualification, including among professionals. In general, the comments of all respondents confirm the need for education and additional qualifications related to CAM.

Attitudes and behaviors related to CAM in individual and family aspects are interrelated and show strong support for CAM in general and in the separate methods.

About 90% of all participants confirmed (always, often and occasionally) that they use CAM to maintain their own health. In general, the most popular, including for personal use and in families, are homeopathy, phytotherapy, apitherapy, folk medicine, Schussler therapy, yoga (Figures 6 to 29). The most used among family physicians are **homeopathy**, with 97% (n = 102) of respondents answering that they use homeopathy "always", "often" or "occasionally"; **Schussler therapy** - 88.5% (n = 101); **apitherapy and folk medicine** - 87% (n = 99); **therapy of Dr. Bach** - 82.5% (n = 94); **aromatherapy** - 79.8% (n = 91). Healing systems such as TCM, Ayurveda, Tibetan medicine, which are becoming increasingly popular, are still underused, compared to those listed above, with many respondents saying that "*I have never tried*"; "*I'm not familiar with the methods*

at all, so I haven't tried." For example, for **TCM** - 50.9% (n = 58) stated that they *had never used it*, and 10.5% (n = 12) were *unaware and therefore did not use it*; for **Tibetan medicine**, these figures are as follows: 57% (n = 65) stated that they *"never used it"* and 32.5% (n = 37) said *"they are not aware of it and therefore did not use it"*. With regard to **Ayurveda**, 50% (n = 57) said they *"never used it"* and 12.2% (n = 14) said they *"did not know and therefore did not use it"*. Although these systems of **Eastern medicine** are not yet widely used, some methods are increasingly used, such as yoga or acupuncture. For example, 42% (n = 48) of respondents use **acupuncture** with different frequency, and 76.3% (n = 87) use **yoga** for treatment or prevention.

Cultural differences are also taken into account. For example, only three family physicians have indicated that they use **osteopathy** "from time to time," and it is part of conventional medicine in the United States. **Anthroposophical medicine**, which is very popular in Europe, and anthroposophical medicines are growing in sales, is relatively unknown in our country. For example, 87.7% (n = 100) of GPs said that they were *"not familiar with the method / system at all and therefore did not try"*, or that *"I have never tried"*. **Bowen therapy** is increasingly used in our country, although it comes from distant Australia (50.9% / n = 58 respondents used this method), while **Vojta therapy**, which is of European origin is still unknown, but its application and effectiveness in children and adults with motor deficits limits mass use. **Naturopathy**, which partly overlaps with the Bulgarian term "folk medicine" is still unknown in our country (71% / n = 81 *"are not familiar with the methods at all and therefore have not tried"*, or that *"never I have tried"*). **Fasting** in our country has its own traditions (71.9% / n = 82, apply it *"often"* or *"occasionally"*), and **folk medicine (narodna medicina)** is part of our national wealth (86.8% / n = 99 apply it *"always"*, *"often"* or *"occasionally"*). **Scenar therapy** is used for personal use among family physicians (49.1% / n = 56 use it *"always"*, *"often"* or *"occasionally"*). **Chiropractic**, better known as **manual therapy**, is widely used (73.7% / n = 84 it is used *"always"*, *"often"* or *"occasionally"*), and **shiatsu**, although included in the CAMbrella methods, is a relatively unknown term and not for personal use (84.2% / n = 96 *"not at all familiar with the methods and therefore "have not tried" or "never tried"*) or as recommended therapy.

The most used among pharmacists and assistant pharmacists are homeopathy - 13.1% (n = 19); phytotherapy - 13.1% (n = 19). It is noteworthy that pharmacists use to the greatest extent for themselves and their families what they can recommend in the context of pharmaceutical care.

There are some specific features of Bulgaria. For example, in our country, unlike in Europe, anthroposophic medicine is relatively unknown, and while in many European countries analyzes put together and equally widespread **homeopathy and anthroposophical medicine**, in our country comparative analysis shows completely opposite results. For example, among GPs, 60% (n = 68) *"never tried"* and 36% (n = 32) *"were not familiar with anthroposophical medicine at all and therefore did not try"* (Figure 14). The results for homeopathy are opposite - only 2% (n = 2) are *"not familiar"*, 1% *"are not familiar and therefore have not tried"* (Figure 15). The results and comparative analyzes were identical for the other three groups of respondents (see Figures 18 and 19; 22 and 23; 24 and 25).

The highest percentage of family doctors (92%) reported that they use some of the CAM modalities followed by pharmacists, in the lowest percentage (74%) CAM is used by the group of medical students. Probably the clinical experience is important, over 60% of the respondents family doctors have professional experience over 10 years.

For the group of the professionals the research is expanded in the direction of **"recommendations to patients related to CAM in the context of medical and pharmaceutical care"**, respectively for doctors in the context of medical care, and for pharmacists in the context of pharmaceutical care - recommendation of medicinal products without recipe (OTC products), phytoproducts, herbal products and nutritional supplements. The registration procedures of the CAM-products are different and vary from products registered under the Law on Medicinal Products and Pharmacies in Human Medicine (homeopathic medicines, Schussler's salts, etc.) or under the Law on Food (food supplements). Those methods that are best known are most recommended - homeopathy, apitherapy, Schussler therapy, folk medicine.

Additional comments highlighting the role of the scientific evidence for both physicians and pharmacists are also interesting. For example, phrases such as *"actively recommend"*, *"first choice methods"*, *"CAM is successful in"* are combined with *"reasonable use"*, *"evidence of effectiveness"*. Especially family doctors also write about the need for patients to share with them everything they accept in connection with their illness. Patients often hide information if it is related to taking CAM products. In this regard, much more often the pharmacist learns about CAM therapy and therefore his role is very important. Knowledge of the interaction of food supplements, phytoproducts with conventional therapy is becoming increasingly important in the context of pharmaceutical care. Expressions such as: *"I don't like KAM, mostly due to the lack of science in most of the methods"* are indicative and open a window of opportunity for training in this direction. Obviously, students cannot be taught only through the stories of patients and healers. Scientific evidence comes to the fore and should be at the forefront of the education of future doctors, pharmacists and other health professionals. Comments related to the *"rather placebo effect of CAM"* are also taken into account, which emphasizes the need for education in this direction as well. Over the last decade, the placebo effect has gained new legitimacy, supported by innovative fundamental and clinical studies in integrative medicine [CAM on PubMed, 2020, Placebo effect]. The placebo effect could be an integral part of good medical care.

The logic of the research requires a study of the opinion of the target groups regarding their interests and the need for training in the field of CAM, both as part of university education and as postgraduate qualifications, certifications and others. The question of the forms of education was also raised before the experts in the subsequent Delphi study.

Both groups (students and professionals) believe that CAM should be included in medical education; however, they believe that KAM needs more research and should be taught scientifically. Bulgarian family doctors and students would like to be better informed about CAM. An approach must be adopted that teaches students core competencies, selects specific content based on scientific evidence and provides students with the knowledge, skills and competencies they need for their future career. Table 6. shows that there are no statistically significant differences between the groups of practitioners and students in terms of responses to most opinions. The only difference is in the opinions related to the statement "University education should give me the necessary knowledge about CAM" / "University education gives me the necessary knowledge about CAM" (p-value <0.008217). The opinion of the professionals is conditional, as they have previously stated that "Despite my high professional workload, I am interested in studying CAM and CAM methods / systems." This is also claimed by a large percentage of students, but unlike professionals, they believe that education does not give them the necessary knowledge about CAM (in the declarative / indicative).

The opinion that "More and more healthy people and patients seek advice for their health and their diseases, preferring prevention / treatment with CAM" is strongly supported, so doctors / pharmacists and future professionals are aware of the need for science-based knowledge about KAM in general and for specific methods.

In the requested additional information related to previous training: *"Have you been trained and / or qualified for CAM or some of the CAM methods / systems?"* Over 2/3 of the respondents answered positively, but in the specific methods the opinion *"I have need more information "* comes to the fore again.

To the question *"Do you support the idea of CAM to be permanently included in medical / pharmacy training programs?"* Over 90% of doctors and 93% of pharmacists support "Yes" the inclusion of CAM in education, as 5.6% (n = 4) they have no opinion. Among the students, 75.2% (medical students) answered positively, and 74.6% (pharmacy students). Probably, the experience of professionals and the needs of their patients is a prerequisite for a higher percentage of support. On the other hand, scientific approaches must be at the forefront of learning so that students can assess the effectiveness and efficiency of CAM.

Specifically, students were asked about the form in which they would recommend the inclusion of CAM in their education. Free Elective Discipline (CH/I) "wins" the highest support - over 50% of all students. The importance of free choice is central to students' comments / narratives. Teachers ("skillful and inspiring with personal experience") are also important to them. Due to the reasons related to the fact that most professions in the field of healthcare are regulated, and there are students who disagree with CAM to be included in the curriculum, it must be concluded that the place of CAM as a separate discipline or as part of modules for integrative medicine is recommended to be studied as Free Elective discipline. The results of this study among pharmacy students correspond to similar studies in Europe and elsewhere.

The fourth part of the questionnaire, which is identical for all target groups, examines the **awareness related to integrative medicine**. Although an officially accepted term, "integrative medicine" is a relatively unknown concept. Of all respondents, 73.3% (n = 288) indicated that they needed more information. As a result, participants can read the definition of integrative medicine provided to them, with over 90% of professionals and over 87% of students declaring that there is a difference between CAM and integrative medicine. This question arises from the fact that the two terms "CAM" and "integrative medicine" are still used interchangeably, which is not correct.

The public debate on the scientific validity and place of CAM in education will continue due to differences in values and philosophical approaches to health and disease. There are many factors that determine or hinder the inclusion of CAM and the introduction of the principles of integrative medicine in modern health care. This dissertation accepts all points of view, and concludes with a summary of the key messages stemming from the narratives shared in this study: **the need for scientific evidence and education, unification, understanding, prevention and sensible therapy**.

The created instruments, both in their quantitative and qualitative component, follow not only a research but an educational ambition. The provided generalizing definitions (of CAM and integrative medicine) and the listed CAM-modalities are part of the idea to acquaint the target groups with the current trends in unconventional medicine from the standpoint of research and teaching experiences.

Highlights of the results and the analysis were presented to the Delphi experts as introductory information to the Delphi-form in the subsequent qualitative Dynamic Delphi study.

2.2. Dinamic Delphi study - results and discussion

The Dymanic Delphi included 21 particiants - experts (invited 24 experts) from the fields of higher education in medicine, pharmacy and public health, whose opinions were summarized and served as a basis for the proposed educational models. The expertise of the respondents is multifaceted and therefore their participation could hardly be limited to only one of the envisaged expert groups. Conditionally, the experts were divided into three panels: 1) political management expert panel - higher medical education and science (8 participants); 2) institutional expert panel of professionals who form and approve the curricula (7 participants); and 3) teaching expert panel - university and certified lecturers in the field of CAM and health promotion (6 participants). Most of the experts could belong to more than one expert panel, so the division is conditional. The description of the group is according to the leading professional expertise, due to which they are invited to participate, respecting the right to anonymity (names of participants are not indicated, only their expert positions, due to which they are invited to participate (See Dynamic Delphi Appendix in the dissertation).

The summary of the results was presented according to the theoretical framework of the Delphi-form filled in by the experts. The narratives in the dissertation are presented extensively due to their professional depth and the possibility to share through the final document with the Delphi community, formed through the study. In summary, support is received in each of the areas: integrative medicine and its constituent elements - CAM, health promotion and disease prevention have a place in education in medicine, pharmacy and other health specialties. With regard to the study of CAM, the recommendation is mostly to be offered as an elective or an optional discipline, and in the postgraduate qualification as certified courses in an institutional environment. The need for good teachers to prepare good conventional specialists with knowledge and, if desired, competencies in the field of CAM combined with literacy in terms of approaches to health promotion was emphasized. This imposes requirements on teachers for long-term training and the need for in-depth knowledge and experience, because one teacher cannot be superficial and believe that she/he understands and can teach everything. The same applies to the general practitioner, pharmacist or other healthcare professional. Teamwork is what is needed, and it is imperative for the professionals to develop positive attitudes and not only functional but also key competencies. Building teams of specialists is the future of modern medicine.

The idea is supported that the inclusion of CAM in medical education can expand the professional horizon of physicians / pharmacists, give them expertise to compare the effects of different treatments and the opportunity to make the best therapeutic choice in a particular situation. The evidence-based application of various methods in medicine (conventional and CAM) will bring medical science and health practice closer to the idea of holism.

There is a support of the idea that the inclusion of CAM in medical education can expand the professional horizon of physicians / pharmacists, give them expertise to compare the effects of different treatments and the opportunity to make the best therapeutic choice in a particular situation. The evidence-based application of various methods in medicine (conventional and CAM) will bring medical science and health practice closer to the idea of holism.

As a result of the Delphi experts proposals, the following generalized and enriched **definition of integrative medicine** is formulated, which is a key result of the current research project. It is a historical necessity arising from the dynamic modern development of healthcare, building on the existing definition provided to us by the Office for Linguistic References and Consultations at the Institute of Bulgarian Language, BAS. The definition has been expanded due to the need to be meaningfully accessible to the wider civic, professional and patient communities. The definition is derived from the Delphi opinions, acceptance / non-acceptance and analysis of the definition proposed in the Delphi-form. It is accepted that **integrative medicine** considers the individual as a whole, in his physical, psychological, spiritual, social and environmental context. Of course, the definition remains open for discussion in the future:

“Integrative medicine is a modern field of medicine. Integrative medicine aims to improve physical, mental, emotional and social health through balanced and individual (personality-centered) application of the existing, evidence-based treatment methods (conventional and CAM), and all possible approaches to prevention and protection (health promotion). Integrative medicine considers the cells, organs and systems in the human body in their unity (integrity) and functional interaction”.

The existing debate on how the word "integrative" should be translated into Bulgarian is also taken into account - as integrative, integrated or integral. The term "integrative medicine" was chosen due to the fact that this is the officially recognized term in our country by the Institute of Bulgarian Language [Service for language inquiries and consultations at the Institute of Bulgarian Language, BAS]. The presence of "health promotion" in the definition expands the concept of integrative medicine in the direction of **integrative healthcare** - a term that is increasingly used in health policy documents with the idea of humane unification of all possible protective, preventive and clinical approaches to health.

3. CREATING CONCEPTUAL EDUCATIONAL MODELS FOR ACHIEVEMENT OF KEY AND FUNCTIONAL COMPETENCES RELATED TO INTEGRATIVE MEDICINE

In times of digital progress and social transformations, evolutionary educational changes are needed that require adequate competences. The KAP study in the field of CAM and integrative medicine provides an opportunity to assess needs and to formulate recommendations in this field of higher education.

Conscious qualification in the field of integrative medicine was a necessary precondition. The author participated in a series of training seminars and public health scientific events in the field of integrative medicine, including: Introduction to Integrative Oncology, 2021, Your life and Cancer, 2020; official establishment of the working group of MEPs "Integrative Medicine and Health" (MEP Interest Group on Integrative Medicine & Health in EP), 7.12.2020; the seminar 'Integrative Oncology' organized by them, March 17, 2021; Workshop organized in the EP, 14.06.2022 - 'Integrative Medicine and post COVID-19 syndrome' and others.

The National Library of Medicine (NLMHI) defines integrative medicine as a new health education discipline created at American medical universities that seeks to combine the ideas and practices of Western conventional medicine (therapy and prevention), and CAM.

Information and inspiration are drawn from the pioneers and leading organizations in the field, such as The Whole Health Institute. Impressive is their program, which provides integrative health

services for veterans applying a holistic model of health. With regard to education, a series of free courses for physicians and health professionals are offered (four-module course with theoretical and practical part for clinicians), as well as general educational courses.

Certainly, the emergence of such programs does not happen suddenly, but is the result of almost twenty years of efforts in the field. Educational strategies for effective change in the United States in the field of medical education have been formed since the turn of the century, with the aim of identifying the core competencies (key and functional) of the modern medical and health professional. The report of the American Institute of Medicine (IOM) "Health professions education: A bridge to quality" is a strategic policy document calling for significant changes that are largely consistent with the goals and vision of integrative healthcare. The necessary competencies are classified into 5 main groups: 1) providing patient-centered care; 2) work in interdisciplinary teams; 3) application of evidence-based practices; 4) continuous quality improvement; and 5) exploiting the potential of digital technologies; 30 competencies in integrative medicine in 4 domains have been identified: **values, knowledge, attitudes and skills**. The overall aim of the report is to develop *"a coherent, generally agreed-upon framework that articulates the core knowledge to be mastered by medical students"*. The competencies proposed in the report were a product of a two-year dialogue on the content, process and scope of integrative medicine training. As a result, the standard format of knowledge, attitudes and skills is being expanded to emphasize that humanistic values and philosophical perspectives must be the basis for an integrative approach to healthcare. The importance of practical training, care for professional and personal well-being, and the need for regulated education and development of teachers in this field was emphasized. There are also significant challenges to how competencies can be applied and properly assessed in specific and specific institutional settings. The importance of this report was almost immediately recognized by the Academic Consortium for Complementary and Alternative Healthcare (ACCHAC). Critical points of contention are clarified through the consensual Delphi process among ACCHAC members. 5 key areas for discussion have been identified: 1) the definition of integrative medicine, as presented in the CAHCIM report; 2) lack of clarity regarding the objectives of the proposed integrative medicine curriculum; 3) the need for a clear delineation of the breadth of the health system and the need for integrity; 4) lack of competencies related to the cooperation between conventional and non-conventional specialists to improve patient care; 5) omission of potential areas of partnership in integrative health education.

Later, the concept of interprofessional education (IPE) was introduced as a collaborative pedagogical approach to prepare future health professionals to work effectively in teams, and to have opportunities to develop common values and better understand the roles and responsibilities of each member of the team.

In Europe, too, education and research in the field of integrative medicine and CAM are developing dynamically, mainly in the countries of Western Europe. When writing keywords in Cyrillic (education, CAM, integrative medicine) in PubMed and other databases, the results are mainly in Russian. In Bulgaria, education in CAM and integrative medicine is partial, often commercial and in most cases not institutionalized. Probably the reasons are historical, because many of the CAM methods were banned after 1944 in our country. Additionally, many of the CAM methods were forgotten and / or denied by the medical community, and the ideas of "health promotion" and "prevention strategies" are still treated unequally with the clinical approaches. It is interesting to compare with the Soviet Union and Russia after the "perestroika", where unlike Bulgaria

homeopathy has never been banned, there are departments of integrative medicine at the medical universities since the early XXI century, and Russian bookstores in the seventies and eighties in our country were one of the few legal sources of medical literature related to CAM.

The proposed universal conceptual educational model (Figure 32) for achieving universal / key and functional / specific, professional competencies is the result of own research and the study of world experience of programs (content and regulations) on CAM and integrative medicine in an institutional environment.

Overall, in Bulgaria, the individual building blocks of integrative medicine are taught, as the least represented and unknown is CAM. Therefore, with regard to CAM, a universal framework is also offered, which systematizes the types of CAM (Figure 33). Most medical students in Bulgaria get an idea of these methods only from electives and during their seminars on "public health" and "history of medicine", which is not enough in the context of growing needs for individualized treatment and the growing search for CAM-methods for treatment of acute and chronic diseases. Of course, in the programs of integrative medicine CAM is only one part. Modules on antimicrobial resistance, healthy behavior, rational drug therapy and others should be also included.

As a result of our own research, following an **inductive pedagogical approach**, through a preliminary study of needs and attitudes, there is a need to introduce standardized educational models to support both the various forms of institutionalized training in integrative medicine and those specifically related to the most underrepresented and most obscure building block - CAM as a science and practice.

Integrative medicine considers the individual holistically, in his physical, psychological, spiritual, social and environmental context, so the proposed conceptual model must have the same characteristics and scope. An educational model is presented, which can be extended to an independent discipline or built as a certified course within the continuing postgraduate education. The universality of the model allows it to be used as an indivisible part of programs in various preclinical and clinical disciplines involved in the training of regulated professions. Existing successful models of practice-oriented courses and disciplines related to one of the CAM modalities could also use the proposed conceptual framework in the context of their specific educational goals.

A universal structural model (Figure 32) related to integrative medicine is proposed, the recommended program content of which should be guided by the following four thematic areas or features:

1) Thematic area **"Principles and characteristics"** - historical development of integrative medicine; philosophical foundations, ethical and legal aspects; holistic health; empathy in medicine; person centered approaches in the doctor-patient relationship.

2) Thematic area **"Building elements" - conventional medicine, CAM, scientific methods (modern epidemiology); health promotion** - theory and application with a focus on CAM and scientific evidence in this field (Figure 5). The research and analyzes in the field of integrative medicine and CAM apply the vocabulary and methodology of health promotion and modern epidemiology. Therefore, the inclusion of short theoretical and practical modules about health promotion and modern epidemiology should be an important part of any program in integrative medicine. The salutogenic approach and holistic models of health defined in the WHO Health

Promotion Glossary are fundamental in the development of the modern concept of CAM and its integration into health systems. CAM and health promotion have common values.

3) "**Educational levels**" - undergraduate and postgraduate, specialization, lifelong learning. When preparing the specific program, it should be clear for which audience it is intended and at what level of competence are the knowledge and skills on the specific topic of the course / program.

4) "**Specialties**", targeted groups - doctors, pharmacists, dentists, assistant-pharmacists, health professionals, professional bachelors. In the courses and programs intended for a specific professional field, in addition to the introductory part, which could be general, it is important to prepare a specific practical part for the target group of students or professionals.

Each specific program, according to its concrete goals and objectives, can be derived from the presented theoretical framework in relation to the differentiated four thematic areas or features (See Figure 32). The present dissertation also provides a program taxonomic framework (See Figure 33), relating to the teaching of the least represented in medical and health education, the most unknown and most debated building block of integrative medicine - CAM (by thematic area: "Building blocks").

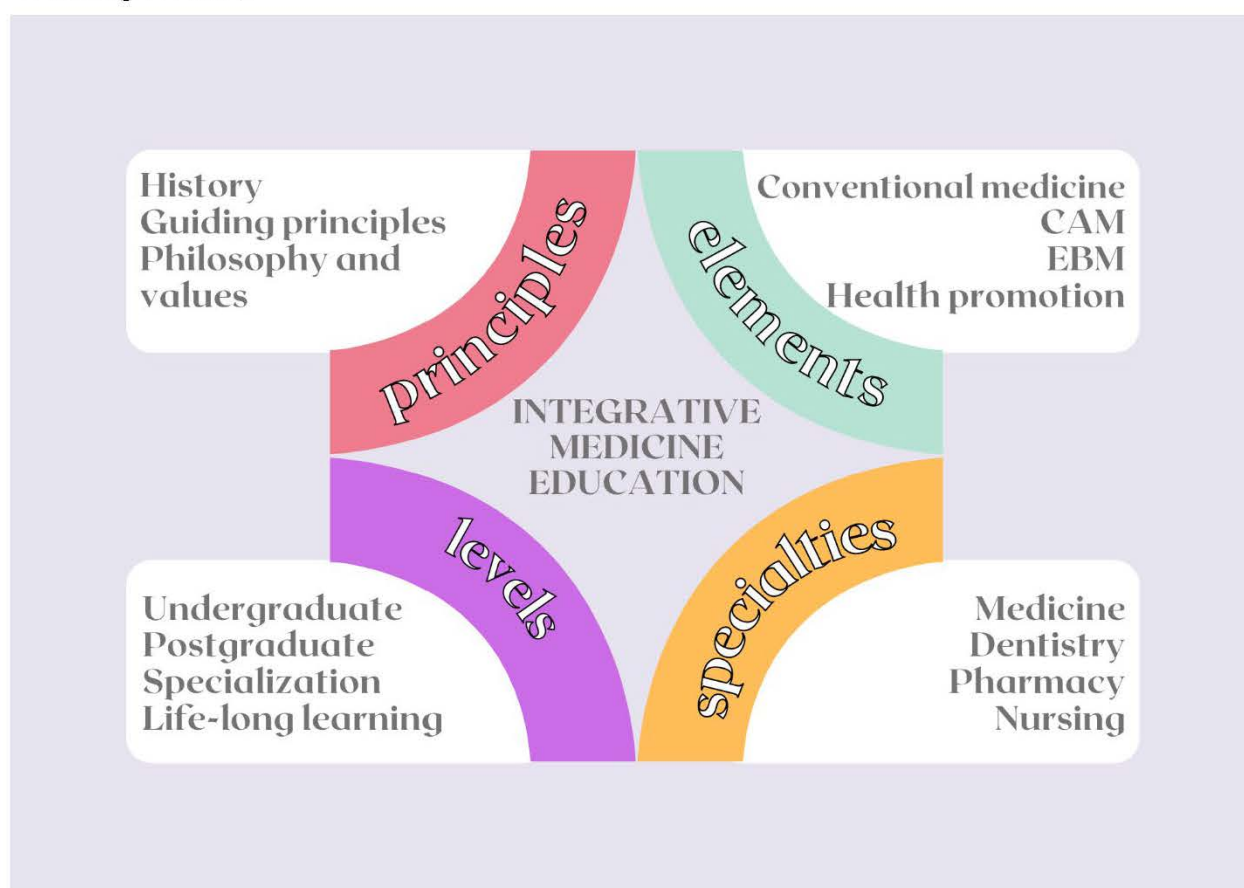


Figure 32. Integrative medicine as education and science - a structural model of program content according four groups of characteristics

The presented CAM-modalities have been tested and proven over time - from ancient times to the present days. There is already valid scientific evidence for many of them, and epidemiological studies are gaining speed to prove CAM effectiveness, efficiency and safety. A more detailed review of KAM-modalities as a building block of integrative medicine was made in the first dissertation related to CAM in Bulgaria [Kapincheva, 2021] and in the author's monographic study

on the historical roots and development of integrative medicine. The proposed "Educational Framework - Taxonomy of CAM" has been adapted to the one proposed in a classification by the National Center for Complementary and Alternative Medicine (NCCAM), currently known as the National Center for Complementary and Integrative Health (NCCIH) in the United States. The additions are in European and national context like anthroposophic medicine, Tibetan medicine, art therapy (bibliotherapy, music therapy, dance, including Bulgarian folk dances and other arts), paneurhythmy, Nishi health system, meditation, mindfulness techniques (awareness), reiki, tai chi, healing touch, flower therapy by Dr. Bach, fasting, Bowen therapy, Vojta therapy (See Figure 33). CAM modalities are classified and presented in the following five main areas, which would be a possible educational framework for systematic study of CAM as a building block of integrative medicine in the direction of achieving competencies that meet the needs of modern healthcare:

1) Complete systems for prevention and therapy: folk medicine, naturopathy; homeopathy; osteopathy; TCM (including acupuncture, acupressure, moxotherapy, chinese herbal therapy, etc.); Ayurveda; Tibetan medicine; Nishi system of health; functional medicine; circadian medicine.

2) Biological therapies: phytotherapy and aromatherapy; food additives; diet therapy, diets and fasting; halotherapy; apitherapy; Schussler therapy, etc.

3) Manual therapies: massage; shiatsu; kinesiology; chiropractic; Bowen therapy; Vojta therapy; Jumeiho therapy, Sayonji method and others.

4) Mind-body therapies: mindfulness; meditation; art therapy (music therapy, bibliotherapy, dances, including Bulgarian folk dances, etc.); paneurhythmy; relaxation; yoga; various types of physical activity for prevention or complementary therapy (aerobics, Pilates, stretching, etc.), animal therapy, dolphin therapy, mineral therapy; Bathing in the forest, Shinrin yoku.

5) Biofield and biofeedback therapies - reiki; tai chi; flower therapy of Dr Bach, therapy with Australian flower essences; Scanar therapy and others.

The proposed models are associated with the European Framework for Key Competences Development towards Sustainable Europe, which are foundation of the National Development Program 2030, where our national priority number 1: "Education and Skills" focuses on the implementation of the European Strategy for Lifelong Learning, by modernizing the education system and achieving greater flexibility in the rapidly changing needs for educational services and human resources, including in health. Moreover, the National Strategy for the Development of Higher Education (2021-2030) also supports the transformation of universities into centers with a general cultural mission to prepare the professions of the future. In this regard, the professions that are the focus of this dissertation are professions of the future and they must be trained, both in the spirit of classical and new values of medicine, some of which are well forgotten ancient knowledge and skills related to health and disease care. Integrative medicine should not be seen as an alternative to conventional medicine because it complements, updates and enriches modern healthcare. Integrative medical approaches are an opportunity to achieve the main goal of modern healthcare: high value for patients and citizens. It is this goal that unites / integrates the interests of all participants in the system. As value increases, society and the individual benefit, patients, funding institutions, healthcare providers and the economic sustainability of the healthcare system increase. In this sense, we could talk about **integrative healthcare**, and integrative medicine programs could include introductory modules related to health economics.

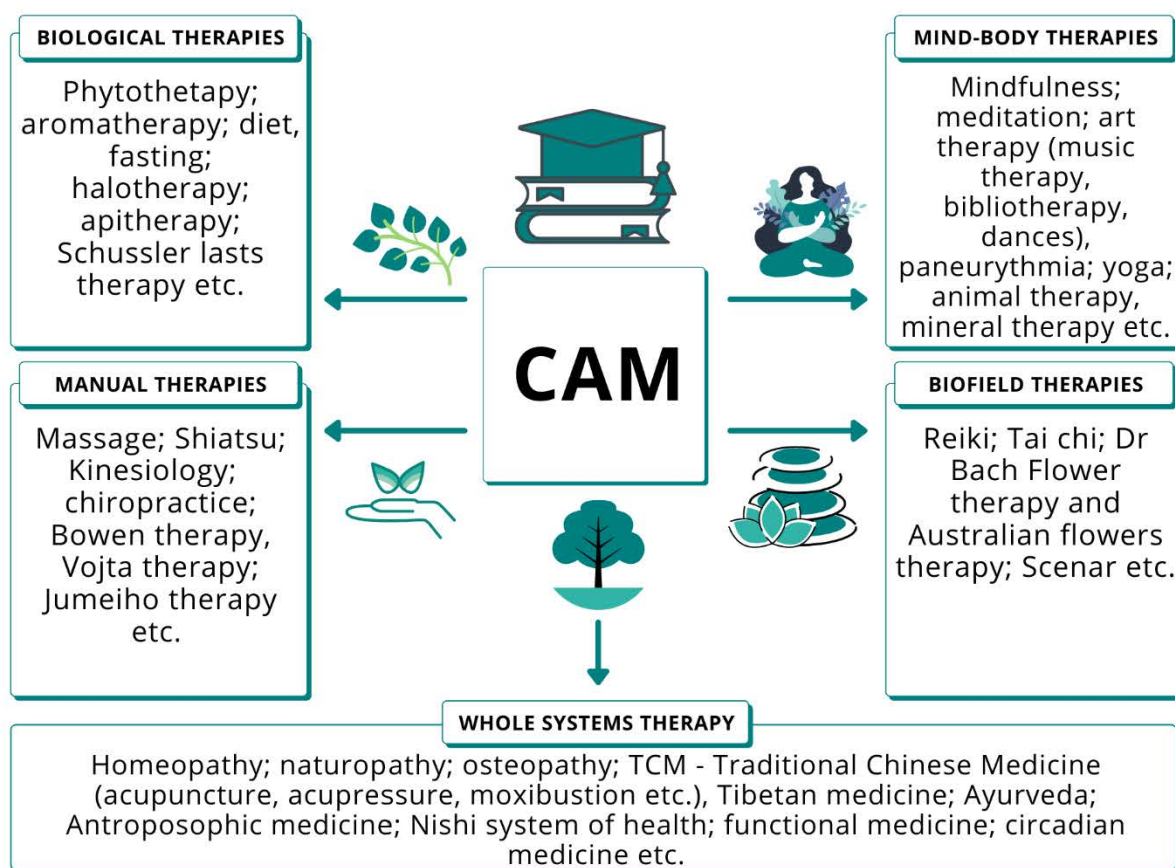


Figure 33. Educational framework - taxonomy of CAM. CAM as a building block of integrative medicine - a structural model of program content in an institutional or non-formal educational environment.

The information obtained through sociological methods - direct individual survey among students and professionals in primary care and Delphi study among experts, supported the need to create a profile of key and professional competencies, namely knowledge and skills that would help students and primary care health professionals to achieve personal fulfillment, to be adaptable to changing individual and public health needs. Over 80% of the respondents in the study want to know more about integrative medicine and specifically about CAM, and the need for training in this direction was confirmed by experts in the Delphi study. Every third European uses CAM, more and more Europeans follow the principles of health promotion. At the same time, these approaches are cost-effective and efficient, which makes them socially significant. Therefore, the knowledge / awareness, skills / practical application related to integrative medicine would contribute to the development of key and professional competencies in medical and health education, developing human resources in healthcare.

Key competences are a central concept of European society, ensuring the connection between the personal, social and professional expression of the modern human being. Regarding integrative medicine, key competences will provide a theoretical framework for the sustainable development of human resources in healthcare. It is clear that no discipline, not even a multi-component field such as integrative medicine, can guarantee the independent development of the eight key competences. However, each discipline, deeply understood in its philosophy, scope and in its relations with other disciplines, can contribute to the development of key competencies necessary for the personal, social and professional realization of the modern European, the modern medical and health professional. In addition, the competence-based educational approach is important, but

it is not an end in itself, but is related to other approaches - for example, the andragogical approach, the problem-based approach, the personality-oriented approach. Integrative medicine is inherently personality-oriented, and this "genetic" inclination is in support of modern individual approaches to adult learners over 18 years of age. Medicine and pedagogy have a common object - the human being, so integrative research approaches in both areas of knowledge and practice interact harmoniously. They are a natural continuation of the paradigm of integrative bioethics, which provides a philosophical-ethical alternative to the monoperspective approach to man, and rethinks the concept of "integrative sciences" as a leading idea for the new era.

The accumulated professional experience and research results have led to the creation of a universal competency profile related to integrative medicine, which consists of two main parts - key / general and functional / professional competencies. The indicated competencies, knowledge and skills can be modified depending on the goal and the decomposed sub-goals in the areas of cognitive, sensory-motor and emotional-value area [Guire's Taxonomy]. For example, in programs that are at the student level, the main goal is to achieve competence in the cognitive and emotional-value areas, while in practical postgraduate training the development of sensory-motor competencies (practical skills) are prioritised.

In support of these integrative medicine educational developments, is the fact that its values and principles are entirely consistent with the six key medical competencies of medical education and specialization defined by the Accreditation Council for Graduate Medical Education, USA (ACGME) and adopted by the American Board of Medical Specialties (ABMS): Patient Care, Medical Knowledge, Practice Based Learning and Improvement, Professionalism; Systems Based Practice; Interpersonal Skills Communication.

IV. CONCLUSIONS, RECOMMENDATIONS AND CONTRIBUTIONS

“...Our medicine originates from the folk medicine and none of us is ashamed of this democratic origin. Then, many of our medicines, dear colleagues, are nothing but extracts and salts of these very folk herbs“

[Prof. Dr Paraskev Stoyanov (1871-1940), a patron of Medical University of Varna].

The study was conducted in the context of missing similar studies in Bulgaria. From the standpoint of balanced research neutrality, integrative medicine is considered and developed as a new social and clinical category that must be studied and researched.

1. CONCLUSIONS

The conclusions are grouped according to the previously formulated objectives of the study.

1.1. Holistic conceptual model

The extensive dissertaion research data and discussions defend the thesis that integrative medicine is not only a clinical concept, but a holistic one, covering the health promotion, science and education. Modifying the definition of one of the pioneers in the field of integrative medicine, Dr. Andrew Weil, we can say that integrative medicine is an intelligent and science-based combination of all approaches to human well-being. It maintains the natural life capacity of the individual to deal with disease, ensuring a holistic and person-centered approach to health.

Medicine is integrative, if it unites and guarantees equality of its building blocks. Therefore, integrative medicine falls within the scope of social medicine and the history of medicine as a research field, and can also be developed as an academic discipline/disciplines.

Evidently, every regulated profession around the world, including in our country, faces specific challenges to reform education in the context of growing needs for knowledge, skills and competencies in the field of integrative medicine. Training for nurses and midwives, perhaps because of its holistic philosophy background, is the most advanced in this direction. Globally, there has been moderate progress in medical and pharmacy education in both postgraduate and undergraduate programs. Studies show that more and more medical schools include CAM and integrative medicine courses. On the other hand, in the training CAM-programs there is significant progress in the inclusion of disciplines providing knowledge on research methods. Ultimately, this is the way to unite in the name of the people who seek care and cure: **mutual learning and acceptance between CAM, health promotion and conventional medicine.**

Another challenge is the fact that not only conventional medicine and CAM have not "communicated" with each other, but also that the various CAM-therapies have been mostly developing independently. Historically, professional and non-governmental organizations in the field of CAM have not worked together to develop common health-political and educational platforms. This is one of the missions of the concepts of "CAM" and subsequently of "integrative medicine" - unification of CAM in areas that are common to all methods - standards, scientific methods, individualized and holistic approach to health. These topics should be covered in the education of all CAM-modalities.

The proposed holistic conceptual model places human being at the center as an adaptive, self-regulating, creative biological system. Patients / healthy individuals themselves take responsibility for their health and care is individualized, with responsibility shared between the doctor / professional and the patient / healthy individual. Treatment includes mobilizing and stimulating self-regulating capacity, restoring balance in the psychosomatic system, with the ultimate goal of creating and maintaining health and well-being, and strengthening the autonomy and resilience of the human body. It can be said that these approaches are "inherited" from CAM and if applied in a single integrative medical model will reduce the need for expensive interventions. Importantly, CAM is not without limitations. In the case of serious diseases such as cancer, sepsis and others, the protection of life must always take precedence over the choice of CAM methods. In addition, in a number of countries, including in Europe, CAM practices and CAM medicinal products are unregulated and may pose a risk to the patients' and healthy individuals' safety. Therefore, there is a clear need for a **joint but judicious and balanced approach**, which in order to be developed must be based on universal principles and common values. The created holistic conceptual model is a step towards the study and application of integrative medicine.

1.2. Types of European educational and research centers on integrative medicine and CAM

The 10 archetypes (Figure 3) summarize and systematise the forms in which education and science of integrative medicine exist in Europe and in Bulgaria, which is an integral part of the European educational and research community. The conclusions that emerge as a result of archetypal modeling are that the European diversities of cultural and historical traditions in medicine and education determine the great variety of educational centers for integrative medicine and CAM. It would be difficult to judge which type is most effective, so it is important to respect the national traditions, which in turn would ensure the sustainability of these centers. In Bulgaria, the education in integrative medicine is still limited in courses on some of the CAM-modalities, as potential for development have both institutionalized electives (СИД or ЗИД) in medical universities and postgraduate specialisations with clear standards and certification. Licensed extra-institutional training should be accredited (within European education) in order to guarantee the quality of the courses offered. Education in integrative medicine has a place in both institutional and non-institutional settings, but standards are needed to ensure quality and safety for users of CAM and integrative care.

At European level, the barriers for the development of science and education in the field of integrative medicine and CAM are the lack of scientific evidence on CAM and insufficient funding for research in integrative medicine and CAM. These are relevant barriers for Bulgaria as well.

1.3. Conclusions from the survey among students' and professionals' communities

Globally, the question is no longer whether integrative medicine and CAM should be taught in medical schools to students in medicine, pharmacy and other health specialties. Today, the debate shifted to how many, which methods and when CAM should be taught. The current study attempts to answer some of these questions for Bulgaria, although data at the national level on the use of CAM are scarce. For example in Turkey, where the preservation of healing traditions is a governmental policy, data from two consecutive studies over a period of 7 years confirm the growing interest in CAM.

The dissertation working hypotheses regarding the own quantitative and qualitative sociological research related to the assessment of the CAM need for education in the field and integrative medicine through a study of awareness, attitudes, interests and behavior of students, doctors and pharmacists (KAP study) were confirmed:

- There is no difference in terms of awareness, attitudes and behavior regarding CAM between groups of students and professionals (general practitioners and pharmacists).
- There is interest among students and professionals related to CAM and integrative medicine.
- The concept of "integrative medicine" is unknown.
- Education is needed in three dimensions: at the university level; postgraduate qualification, including introduction of experts in education and healthcare; lifelong learning.
- Integrating CAM into curricula would better prepare physicians for their future professional tasks.
- Family physicians, pharmacists and assistant-pharmacists need additional information and would participate in training on CAM and integrative medicine.
- In medical and health education, there is the concept of "double competence", which means a combination of competences for conventional and non-conventional therapy and prevention. The need to build such competencies was confirmed.
- Among students, the classical teaching methods are still relevant - lectures and exercises (practical seminars). In both groups, online training is increasingly preferred because it saves time and provides an opportunity to raise awareness.
- An important conclusion is that in the conditions of the fourth wave of COVID-19, online training has become a very convenient and safe way to maintain qualifications, including among professionals. In general, the comments of all respondents confirm the need for education and additional qualifications related to CAM.
- In terms of content, the courses offered can be either "Introduction to Integrative Medicine" or for specific CAM-modalities.
- The place of CAM as a separate discipline or as part of modules for integrative medicine is recommended to be as an elective, for reasons related to the fact that most professions in health care are regulated, and there are students who disagree with CAM to be included in the curriculum.

1.4. Conclusions from the Dynamic Delphi study among experts

Public health is a constantly evolving field of research and education. The development of the idea of integrative medicine not only as a clinical but also as a socio-medical concept is a proof of this.

- The Delphi experts accepted the proposed holistic conceptual model (20 out of 21 participants) and supported the introduction of integrative medicine and CAM in higher medical and health education, but when it is based on scientific evidence;
- The Delphi experts agreed that health promotion and disease prevention need more attention in Bulgarian healthcare and education. In practice, the global social movement for integrative medicine and for integrative healthcare has fully adopted the vocabulary and terminology of health promotion.

The definition proposed in the study was expanded and enriched due to the need to be meaningfully accessible to a wider civic, professional and patient community. It is accepted that **integrative medicine** considers the individual as a whole, in his physical, psychological, spiritual, social and environmental context: **“Integrative medicine is a modern field of medicine. Integrative medicine aims to improve physical, mental, emotional and social health through balanced and individual (personality-centered) application of existing, evidence-based treatment methods (conventional and CAM), and all possible approaches to prevention and protection (health promotion) . Integrative medicine considers the cells, organs and systems in the human body in their unity (integrity) and functional interaction”**.

- The idea that CAM and integrative medicine should be studied as elective discipline/disciplines as the most feasible undergraduate option was strongly supported. As most health specialties are regulated professions and the obligatory disciplines are regulated in the respective Ordinance on uniform state requirements, it is considered that at this stage it is most appropriate to include CAM in the framework of integrative medicine as an independent elective and / or optional discipline, as well as through separate topics covered in the programs of various preclinical and clinical disciplines such as public health; social medicine; history of medicine; applied epidemiology; health promotion, physiotherapy and rehabilitation, and in the individual clinical disciplines.
- With regard to the inclusion of CAM and integrative medicine in the postgraduate training, certified courses in an academic environment are recommended, which should be more practical and derivatives of the professionals' interests.

More than half a century ago, the WHO defined health as *"a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"*. With this study and the proposed definition, efforts are continuing in the direction set by the WHO for holistic and humane approaches to health and disease.

More than a decade ago (1997), the European Parliament Resolution on unconventional medicine or CAM supported the need for qualified CAM staff to protect the safety of patients and citizens. At the heart of any health policy is the right of people to the widest choice of therapies, including CAM, by providing the most accurate information possible on the safety, quality and efficiency of services and products.

In 2002 The WHO has issued the first strategic document in support of the growing demand for T&CM or CAM, such as Ayurveda, traditional Chinese medicine, homeopathy, anthroposophical medicine and others. Standards for training in some CAM- modalities have also been established. The focus of this study was the needs assessment of education (knowledge, skills and competencies) of the conventional specialists in order to meet the their patients' demands, and to build a universal conceptual educational model for teaching modules in integrative medicine and CAM.

1.5. Conceptual educational models and competences. Conclusions

Universal educational frameworks are proposed (Figures 32 and 33), which can be adapted to educational needs, but also respect cultural traditions.

Science determines our understanding of reality. It is traditionally accepted that conventional Western medicine is the only scientific medicine based on a materialist model that includes Darwin's theory of evolution, Newtonian physics, chemistry and physics (particle level), anatomy and physiology. However, science is evolving and quantum physics already provides new

opportunities for the analysis of life processes, as well as for the discovery of scientific evidence related to the effectiveness of CAM. The conclusion is that these trends in science should also be taught, included in the training programs of future health professionals.

Modern social processes of the “open dialogue” (OD) between physician / pharmacist / specialist and patient / client / citizen regarding CAM create opportunities for therapy and prevention, as well as increases the level of safety for users of CAM methods and products. Integrative medicine develops conditions for a reasonable open dialogue, but also reduces the financial burden on the modern healthcare. The idea of **integrative healthcare** is gaining popularity instead of integrative medicine, because reducing health to purely clinical approaches excludes holism, while it is at the heart of the development of effective healthcare. Academic precision calls for the use of the term “healthcare” instead of the narrower focus on “medicine”, because integrative healthcare reflects social needs and provides the whole continuum of care, treatment and prevention. Today, holistic health encompasses the integrative idea of "One Health" - the unified health of humans, animals and plants. Holistic approaches to health are also supported by theories about the "exposome" and the circular economy, which are a real-life opportunity to study the integrated impact of all environmental factors on health. Moreover, we are living in the era of the Fourth Industrial Revolution (4IR), when changes must be made at speed so that the overall development happens. 4IR is mainly driven by the achievements of artificial intelligence and is characterized by a fusion of technologies that blurs boundaries, integrates the physical, digital and biological spheres, and this inevitably affects science and education. Evolutionary development is imperative for higher education so that it does not lag behind the needs of the society.

The new branch of science called "low dose medicine", which allows for therapy with very low doses of drugs in the absence of side effects, is also part of the progressive movement of integrative medicine. Integrative medicine can be a solution to health problems. Therefore, the study of its methods and approaches is recommended to be included in modern medical education in our country. International experience in this direction proves the social necessity of this.

2. RECOMMENDATION

The presented study examines and presents the holistic concept of "integrative medicine", emphasizing the need for the development of science and education in this direction.

In fulfillment of the objectives of the dissertation, based on the data and analysis of the present study, recommendations will be made addressing the policy makers and managers in the education and healthcare system at the national level. In addition, recommendations are made at the institutional educational level in order to enrich existing training programs and support the creation of new training modules in institutional and extra-institutional environments.

It is clear that the CAM demand and consumption are growing exponentially, which requires integrative approaches to health and disease. However, in the field of medicine there is still a dichotomy that opposes conventional and unconventional, which prioritizes drug therapy over preventive care. The negative effect of these separating tendencies is the lack of communication between different specialists, the impossibility of creating an empathic relationship between the parties in the preventive and curative processes. The WHO supports teamwork between conventional and non-conventional professionals. The inclusion of CAM services and products in the universal health insurance should be based on the same indicators on which the inclusion of

conventional services is based. These indicators include the legitimate education and qualifications of practitioners, as well as the full range of quantitative and qualitative evidence of effectiveness, safety and quality.

European policies are developing very dynamically and in support of integrative medicine and preventive approaches. The European Parliament formally endorses the use of integrative medicine and complementary methods through its two recent resolutions on public health: on the European Pharmaceutical Strategy (EP Resolution of 24 Nov. 2021 on a Pharmaceutical Strategy for Europe - 2021/2013 / INI) and on the strategy for the fight against cancer (EP Resolution of 16 Feb. 2022 on Strengthening Europe in the Fight against Cancer - Towards a Comprehensive and Coordinated Strategy - 2020/2267 / INI). For the first time, a policy paper emphasizes the fact that scientifically recognized integrative medicine, approved by public health authorities, can benefit patients in terms of the parallel effects of several diseases. The importance of developing a holistic, integrative and patient-centred approach is also emphasized, encouraging, where appropriate, the additional use of complementary therapies under the supervision of health professionals (the text is identical in both resolutions - recommendations 23 and 114 respectively).

As a result of the research and analysis of the results of the study, ideas and strategies for necessary actions were generated in three overlapping and complementary areas: **1) at a national health policy and education level; 2) at a research level in the field of integrative medicine, CAM and health promotion; 3) at an institutional educational level.**

2.1. Recommendations at a national health policy and education level

- Social acceptance and introduction of the integrative medicine concept in health policy documents as a modern branch in medicine, aimed at improving physical, mental, emotional and social health through balanced and individual (personality-centered) application of known, evidence-based treatment methods (conventional and CAM), and all possible approaches to prevention and prevention (health promotion). Integrative medicine considers the cells, organs and systems in the human body in their unity (integrity) and functional interaction;

- Establishment or restoration of a **National Center for Research and Application of the Bulgarian Healing Traditions**, which will create conditions for fundamental and applied projects funding in the field of integrative medicine (CAM, health promotion and disease prevention).

National policies towards the preservation and development of national healing traditions are an important part of our cultural identity preservation.

Health reform initiatives launched in recent years in Bulgaria are increasingly focused on achieving more efficiency, effectiveness and financial stability of the healthcare system. Opportunities in the direction of financial efficiency and effectiveness are provided by the application of the principles and methods of integrative medicine. Although the term does not appear in any of the studied strategic documents and analyzes, it is a part of the path to effective reforms in our national health system. The reforming evolutionary potential of integrative medicine has the following characteristics: it builds on, not destroys; returns to the roots and shares the best of the world cure and care experience. Certainly, all these "inclusion processes" are based on scientific evidence that integrative medicine, as a scientific territory, provides, both in the field of basic and applied research. The proposed conceptual model reflects the current global trends related to health care reform in the direction of efficiency and effectiveness and could be applied in national policy documents.

- An important priority is the development of national educational standards in the field of CAM, as a guarantee for quality education. Education is needed in three directions: at the undergraduate and postgraduate levels as qualification and acquaintance of experts in education and healthcare; and lifelong learning.

2.2. Recommendations at a research level in the field of integrative medicine, CAM and health promotion

- Creating regional and institutional opportunities for research that will generate evidence and enable the transition from critical-negative approaches to positive, science-based and cost-effective approaches to integrative medicine and CAM.

- For the development of public health research in the field of integrative medicine it would be useful to create a standardized population survey in order to collect descriptive data on a regular basis about the use of integrative medical services and specifically CAM-modalities and products (socio-demographic characteristics of CAM users and products; economic efficiency, patient satisfaction and others). Regularly conducting such population-based surveys will create a database that will expand the capabilities of all researchers conducting population-based surveys. The funding of such population-based studies is related to the social significance of integrative medical approaches and the prevention opportunities provided by CAM in combination with conventional methods.

- The needs assessment for gaining new knowledge, skills and competencies cannot be a one-time act at the beginning of a specific educational idea realization, but must detect the changes in the attitudes and behavior of all participants in the educational process. An increase in the need for training in the field of integrative medicine is envisaged and it would be interesting to prove this with a similar needs assessment, for example after a period of 5 years.

- KAM needs more research and the creation of online platforms for access to scientific information, including at a national level.

2.3. Recommendations at an institutional educational level

The recommendations are mainly related to the need for reform and innovative initiatives in the field of medical and health education. Proposals are made mainly within the institutionalized form of education.

- Integrative medicine and CAM have their place in medical and health education and should be taught in universities.

- CAM must be taught evidence based. It is recommended to adopt an approach in which students are taught basic competencies such as an introduction to integrative medicine or a specific CAM modality. The choice of specific program content should be based on scientific evidence, and provide students with the knowledge and possibly skills they need for their future professional realisation.

- Training the trainers is needed, recommending a team approach to combine the necessary theory with competent practice.

- Creation of normative opportunities for inclusion of integrative medicine in an adequate way in the programs of the higher medical schools and in the postgraduate qualification of the medical and health specialists. It is best to do this in the form of an elective or optional discipline (introductory courses) or a postgraduate qualification with a certificate. At this stage, the

development of Master programs in integrative medicine (after previous higher medical / health education) is more difficult to apply.

Medical University of Varna is educating medical and health professionals that will work all over the world. Young doctors, dentists, pharmacists and other specialties need to have knowledge about the most popular unconventional methods and systems used worldwide. Globally, TCM along with Ayurveda are the most common healing systems. Therefore, introductory courses related to these unconventional systems could also be offered for the Bulgarian but also for the English language program.

- The practice of integrative medicine goes beyond the acquisition of content, tools and techniques to include personality-oriented and holistic approaches, considering the relationship between the practitioner and the patient / healthy individual and their joint work. Therefore, in compliance with the conventional regulatory standards in medical, pharmaceutical and health education, the **program content** needs to reaffirm and emphasize the humanistic fundamental values in medicine. Training in integrative medicine should include philosophical and ethical perspectives, in addition to the basic knowledge on CAM and therapeutic skills. The values set in the proposed holistic model of integrative medicine are fundamental for the formation of educational values in the conduct of training in integrative medicine, regardless of the form, level and targeted specialty. It is important to emphasize that these values are not only related to the responsibilities of the doctor, pharmacist, etc., but also to their rights. A healthy lifestyle should be an aspiration and value not only for patients/population, but also for the medical and all the health professionals. Medical University of Varna adopts sustainable policies in terms of ensuring healthy choices for both teachers and students.

The public debate around integrative medicine is no longer just about the inclusion of CAM, but also about the adoption of values. To what extent can values be taught or are they a matter of attitude and culture? The adaptation of the proposed educational frameworks is a pre-set condition. Defined competencies (knowledge and skills) can be modified in different ways to meet the specific needs and culture of individual universities and specific programs.

Moreover, the introduction of integrative medicine programs in medical schools would be a good opportunity to implement the institutional academic strategies for the development of key lifelong competencies set by the MoH in accordance with the European Reference Framework for Key Competences for Lifelong Learning. The conservative academic environment in medical universities is a fact and any attempt to "invade", would violate someone's interests and rights, which, however, is not the purpose of the study. On the contrary, the ambition is to upgrade and develop key competencies that ensure adequacy and survival in a rapidly evolving world.

However, in order to bring about this transformation towards integrative approaches in healthcare, it is necessary to create incentives (financial and moral) that potentiate the commitment to health promotion and holistic disease management. An example in this direction are the courses in integrative medicine, which are included in the accreditation of medical doctors and other health professionals from the National Health System (NHS) of Great Britain: "Introduction to Integrative Oncology" organized by Horisons, the professional training center at Yes to Life Learning and Professional Development Center (a leading British NGO for integrative oncology).

- Maintaining a health educational portal targetting the general population and the professionals. For example, the University of Harvard and specifically the academic publishing house "Harvard Health Publishing" - maintain online series (scientific reports and books on health education) in

integrative medicine, providing the opportunity for online subscriptions, incl. and free (#HEALTHbeat).

We are participants in the 4IR, which requires integration and imposes merging of all areas of life: technological, humanitarian, natural. Advances in medicine inevitably lead to the synthesis of all possible methods in favor of health. The Corona virus and the epidemiological situation associated with it have proven in practice the effectiveness of the integrative medicine idea. Health promotion is not an utopia, but a historical and health necessity. All methods that help to prevent and to offer harmless therapy must be applied for the survival of the mankind. Faced with the infectious threat, we have a choice and it is integrative medicine over segmentation and purely pharmaceutical approaches.

3. CONTRIBUTIONS

Every research that introduces new ideas must strive for a balance between conventional skepticism (everything new is risky and doesn't work) and uncritical enthusiasm (everything new is supreme and works). In the present dissertation the well-informed and balanced point of view of a researcher and a university lecturer is applied, which enables reliable conclusions and sustainable recommendations. Integrative medicine based on scientific evidence and quality education are the focus of the presented dissertation.

Integrative medicine is an innovative field that is developing extremely dynamically, and in Bulgaria is making its first steps, one of which is the current dissertation.

Original contributions:

- 1) For the first time in our country a study of the concept of "integrative medicine", as a holistic idea and medico-social construct. For the first time, a **holistic conceptual model** has been created that allows for further investigation, development and application of integrative medicine and healthcare;
- 2) An **original terminological guide on integrative medicine** has been developed, which can meet both research and educational needs;
- 3) For the first time in Bulgaria, **universal educational models** are being developed to serve as a matrix for the creation of educational modules in integrative medicine and CAM.

Applied practical contributions:

- 1) The application of integrative exploratory sequential mixed-methods design is an innovative approach in the field of research related to health and education in our country. The mix-method approach is increasingly being applied as an alternative to conventional mono-methodological scientific approaches in medicine, public health and higher education. The integrative approach is also based on theoretical and philosophical models, which are a natural continuation of the paradigm of **integrative bioethics**, providing a philosophical alternative to the monoperspective view of the world, and rethinking the concept of "integrative sciences" as a leading idea for the XXI century.
- 2) The assessment of the educational needs in the field of integrative medicine is made for the first time in our country and could be an idea for monitoring the educational needs of students and health professionals. The **knowledge, attitudes and practice - KAP study**, are recommended by the WHO to study the real situation in a given field of healthcare. The presented study of awareness, attitudes, behavior and interests of student and professional communities regarding

CAM, health promotion and the concept of "integrative medicine" is the first in its kind in the field of higher medical education in Bulgaria.

- 3) The present study provides a practical model for conducting a Delphi study, called **Dynamic Delphi**, due to the need to adapt to social isolation. The protocol of this qualitative study was structured as a process of gathering ideas and opinions from experts on the specific complex topic through a series of questions combined with information exchange and reaching a summary document of the final, which each of the experts received.

In conclusion, the proposed holistic model of integrative medicine could have an applied character, supporting the transformation of the modern model of healthcare in Bulgaria. The idea is through the model to offer possible useful combinations of the best in conventional medicine, CAM and health promotion, in order to have optimal personal choice and individualization of care to improve health and well-being. Ideally, the implementation of the conceptual model means the inclusion of the whole continuum of services, from health promotion and disease prevention, treatment, prehabilitation and rehabilitation, covering the entire life cycle of human life.

Integrative medicine is a new territory, which is an adequate response to the emerging new movement for a healthy lifestyle, healthy eating, for a life harmonized with the laws of nature. Health is determined by many different physical, spiritual, emotional factors, and the causes of acute or chronic disease are always complex. Therefore, both in prevention and in the treatment process it is good to apply complex and diverse methods.

Integrative medicine is an eternal idea, and the infinity is beautiful and interesting! Such ideas are understandable and fruitful only for those researchers who are ready to understand, accept and apply them!

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PARTICIPATION IN SCIENTIFIC AND EDUCATIONAL FORUMS RELATED TO THE TOPIC OF THE DISSERTATION

1. Introduction of Integrative Medicine. Combining lifestyle and complementary approaches with conventional treatment, 26-28 Sept. 2020. Yes to Life and College of Medicine, UK.
2. Introduction of Integrative Oncology for healthcare professionals (Certificate- the CPD Standards Office: Provider No: 41082). UK, NHS certified.
3. Participation in the European Congress of Integrative Medicine (ECIM London, 4-7. 11.2021) and in the meeting of the European Society of Integrative Medicine (ESIM) - ECIM has been approved by CPD Certification Service for 21 CPD Points.
4. International Masterclass AMR, AMR Insight, 24.09.2021, AMR Ambassador, member of the AMR Insights Ambassador Network, www.AMR-Insights.eu
5. Plenary lecture „Интегративната медицина - интелигентна инвестиция в бъдещето“ – 2.10.2021, Jubilee symposium „Името е знак“ at the Medical College of Varna. , в дните на официалните чествания на 60 годишния юбилей на Медицински университет-Варна.

PARTICIPATION IN AN INTERNATIONAL SCIENTIFIC PROJECT (2021- ongoing): Representative for Bulgaria- JPIAMR “GIFTS-AMR” project - chair of a working group “Increasing the accessibility of (information of) T&CM medicinal products for infections”.

PARTICIPATION IN A NATIONAL SCIENTIFIC PROJECT (2020- ongoing): Project leader, Fund Nauka: „Научни подходи към комплементарната и алтернативна медицина - концепция, контекст, качество на живот“.

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I am a representative of the Dutch School of Public Health, so I will finish with the traditional for every doctorate, defended in the Netherlands - stellingen or philosophical conclusions phrases and thoughts related to the research topic:

1. „*Know yourself*“ (*Nosce te ipsum!*); „*Nothing in excess*“ and „*Security brings destruction*” - the Delphi maxims written in the Temple of Apollo vestibule in Delphi, Greece.
2. *More powerful than an army is the idea whose time has come.* Chinese proverb
3. *Knowledge is power* (*Nam et ipsa scientia potestas est*). Latin phrase
4. *Among the ten thousand professions, the highest is that of scientists.* Chinese proverb
5. *If you fill your head instead of your pockets, no one will be able to rob you.* Chinese proverb
6. *When you reach the top of the mountain, keep climbing.* Zen proverb
7. *Being healthy does not mean not being sick at all. You are healthy if you are light, flowing, ethereal, thin-hearted.* Paracelsus