

**THE BIOGRAPHICAL METHOD AS A MEANS OF FORMING THE PROFESSIONAL PERSONALITY AND PROFESSIONAL IDENTITY OF THE FUTURE DOCTOR****(as exemplified by the integration of the study of human anatomy and the disciplines of the foreign language training cycle)****Poltava State Medical University (Poltava, Ukraine)**

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*In the context of the anthropocentric paradigm, historically-oriented personal studies are recognized as one of the most promising areas of scientific search, in which the reflection of the past is carried out through the study of the unique history of human life and activity, which, on the one hand, is the creator of history, and on the other, its carrier. This determines the relevance of the use of the biographical method as one of the tools in the formation of the professional personality and professional identity of future specialists. The studies of curriculum vitae of prominent physicians have a long standing tradition, since medicine, as perhaps none of the other scientific fields, maintains an inseparable link between past and present, because modern scientific research, on the one hand, is based on discoveries and achievements, generations, scientific schools, and on the other, it is impossible to move forward without the mistakes of predecessors and the desire to correct or refute false theories and hypotheses. The aim of this article is to analyze the curriculum vitae of the most prominent representatives of medicine in different historical epochs with an emphasis on their contribution to anatomy and medical terminology in specific socio-cultural and historical contexts. The biographies of outstanding anatomists in the context of the development of anatomical science, from antiquity to the late Middle Ages constitute the object of the study. The research relies on the following general methods: analysis, synthesis, systematization, generalization, bibliographic search, analysis of literary sources; as well as special methods: historical and comparative, biographical, and interpretative. The study demonstrated that the use of the biographical method in the process of studying the anatomy and disciplines of the foreign language training cycle is an effective means of forming a professional personality and professional identity of the future doctor.*

**Key words:** biographical method, students of medical HEIs, human anatomy, disciplines of the foreign language training cycle.

**Connection of the publication with planned research works.**

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**Introduction.**

A change in the object of knowledge under the influence of the transformation of the scientific world-image, which is closely related to worldview, embodying in worldview principles a way of interpreting general scientific ideas, is an indicator of the evolution of science [1]. In the context of the anthropocentric paradigm, historically-oriented personological studies are recognized as one of the most promising directions of scientific research, in which the reflection of the past is carried out through the study of the unique history of the life and activity of a person who, on the one hand, is the creator of history, on the other, its carrier [2]. This determines the relevance of the use of the biographical method as one of the tools for the formation of professional personality and professional identity, which, among other things, is formed with reference to the general history that explains and legitimizes the place of professions in society [3].

Analysis of the works of Ukrainian and foreign scientists shows a significant increase in the number of scientific investigations devoted to the study of the biographies of prominent scientists, doctors, and inventors

[4, 5, 6, 7, 8, 9, 10, 11, 12, 13]. History has illuminated every field of human endeavor – science as well as the arts – embracing countless modern disciplines, expanding its focus on change over time to comprehend entire nations, cultures, and civilizations, each far more complex than any individual life. But at its best, biography is the finest form of history [14].

It is worth agreeing with Ukrainian researchers K. Aleksentseva-Timchenko and A. Melnikov, who believe that the biography of an individual should be considered as a coherent sequence and continuous unfolding of real events, among which certain structural elements or turning points that divide life into "ante" and "post" [15]. Despite the fact that this thesis was formulated by the scientists in relation to synchronous sociological research, in our opinion, it is very relevant for medical, pedagogical, and historical studies, since the phenomenon of biographicalness has significant educational potential. We observe a similar opinion among other scientists, for example, A. Pavlenko believes that the analysis, selection and inclusion of pedagogically adapted biographical information about the personalities of outstanding scientists and inventors in the content of educational subjects of various fields allows us to implement an important cultural, historical, and educational function [16].

As for medical, pedagogical, and historical studies, it is a long-standing tradition to review the curriculum vitae of prominent doctors, because medicine, like perhaps no other scientific field, preserves an inextricable connection between the past and the present. Indeed,

modern scientific researches, on the one hand, rely on the discoveries and achievements of representatives of other eras, generations, and scientific schools, and on the other hand, forward movement is impossible without the mistakes of predecessors and the desire to correct them or refute false theories and hypotheses. In this context, the opinion of the Belgian researchers Gaëtan Absil and Patrick Govers is quite feasible, that the history of medicine is an archetype of the history of the gradual movement of scientific progress, which step by step, thanks to “precursors”, was separated from religion, getting rid of religious dogmas and prejudices [3]. Therefore, mastering the medical science, anatomy and professional terminology, in particular, presupposes a thorough acquaintance with its history, which is impossible without taking into account biographical aspects, since, according to the quite valid statement of the above-cited scientists, “the history of medicine is reduced to the history of great people and their ideas” [3].

#### **The aim of the study.**

To analyze the curriculum vitae of the most prominent representatives of medicine in different historical eras with an emphasis on their contribution to anatomy and medical terminology in specific socio-cultural and historical contexts.

#### **Object and methods of the research.**

The biographies of outstanding anatomists in the context of the development of anatomical science, from antiquity to the late Middle Ages constitute the object of the study. The research relies on the following general methods: analysis, synthesis, systematization, generalization, bibliographic search, analysis of literary sources; as well as special methods: historical and comparative, biographical, and interpretative.

#### **Research results and their discussion.**

The history of medicine and anatomy, in particular, has its roots in ancient times. Thus, the artifacts found in Mesopotamia, a historical territory located between the Tigris and Euphrates rivers, and which is considered the cradle of human civilization, prove that the rudiments of anatomy already existed there.

In the ancient Indian Ayurvedic treatises, more than 150 diseases of the joints, brain, heart, abdomen, urinary and genital organs are described. This shows that the ancient Indians were familiar with the structure of the described organs, although the anatomical terms that occur in the treatises give reason to claim that the knowledge of anatomy was inaccurate.

The ancient Egyptians depicted the heart with amazing anatomical accuracy for that time (approx. 3000 BC). They considered the heart as an organ giving rise to eight vessels, the number and arrangement of which resembled the aorta, the pulmonary artery, the superior and inferior vena cavae, and the four pulmonary veins. The Egyptians also had knowledge about the liver, brain, and blood vessels [17].

However, for thousands of years, human knowledge in the field of anatomy was limited by religious and other prejudices, which stood in the way of accurate knowledge of the organs of the human body and their functions, leading to the emergence of risky and false hypotheses, thereby restraining the development of anatomy and medical science in general. Thus, considering the fact that in Ancient Greece, dissection of the body after death was strictly prohibited, one of the

most famous ancient philosophers, encyclopedists and naturalists, Aristotle (384-322 BC), in order to imagine how the human body functions, was forced to dissect animals and extrapolate the acquired knowledge to humans, which, of course, could not but have a negative impact on the knowledge of that time. Aristotle also made numerous anatomical mistakes: he claimed that women have fewer teeth than men, he believed that a man's skull has three sutures, and a woman's – only one; that the arteries are filled with air, that a person has one lung, etc. [18]. Such anatomical terms as “acromion”, “apophysis”, “ileus”, “kyphosis”, “perineum”, “peritoneum”, “symphysis”, “thorax”, and “ureter” are already observed in Aristotle's works.

Transfer of the scientific activity from Ancient Greece to Egypt in the 3rd century BC and the formation of the Alexandrian school became one of the factors in the progress of anatomy. Due to the widespread practice of embalming in Ancient Egypt, dissection of corpses was commonplace here. Thus, in the writings of some ancient authors, there is evidence that one of the well-known representatives of the Alexandrian medical school, Herophilus (c. 300 – c. 250 BC), accompanied his lectures with public dissections of corpses. According to other sources, he even performed vivisection on criminals sentenced to death. Herophilus was one of those who pioneered the experimental method in medical science, as he scorned any theory that did not rely on practical knowledge. At his lectures in the anatomical theater of the Alexandrian Museion, which were attended by students not only from Greece, but also from all over the East, he demonstrated various organs and their functions. There is an opinion that Herophilus personally performed autopsies on 600 corpses, which enabled him to make many sensational discoveries at the time. Herophilus presented the results of his research mainly in the epoch-making work “Anatomica”, which, unfortunately, has not survived to our time [18].

It was Herophilus who began to differentiate arteries and veins and recognized that these vessels are filled with blood. He described the heart, liver, duodenum, pancreas and prostate gland, pulmonary veins and arteries, meninges, vascular plexuses, ventricles of the brain (it is interesting that the fourth ventricle was considered by Herophilus to be the seat of the soul). Herophilus traced the course of the nerves, discovered the connection between the brain and the spinal cord, and expressed the opinion that the brain is the center of the nervous system. Anatomy owes Herophilus a thorough study of the optic nerve, retina, and vitreous body. These achievements give us reason to consider him one of the founders of anatomy [18, 19].

To study the work of the heart, Herophilus listened to the pulse and distinguished its four phases: systole, diastole and two intermediate intervals. Considering the pulse as the most important element of diagnosis, he measured its frequency with the help of a clepsydra – a water clock. Such an approach was certainly a significant advance in the study of physiological phenomena [18, 19]. Herophilus is credited with the authorship of such modern Latinized anatomical terms as “duodenum”, “prostate”, “leptomeninx”, and “pachymeninx”.

Erasistratus (3rd century BC) was a Greek physician who lived at the court of Seleucus Nicator, the general of Alexander the Great, who, after his death, overthrew

the Seleucid State. Erasistratus (like his predecessor Herophilus) was a bright representative of the Alexandrian school. He also performed autopsies on human corpses, and studied the functions of the digestive organs on live animals, observing the peristalsis of the stomach. Erasistratus described the gyri of the brain, which, according to Erasistratus, was the center of the soul and the beginning of the nerves, the liver and bile ducts, the valves of the heart and the great vessels [20]. This scientist expressed an opinion about the connection between arteries and veins, and also found out that arteries pulsate, but veins do not. Unlike Herophilus, who did not make a clear distinction between types of nerves, Erasistratus distinguished motor and sensory nerves. He also distinguished two systems in the human body: vascular (arteries and organs of the abdominal cavity) and nervous. Although only a few fragments collected by Galen survive from Erasistratus' works, the anatomical works of Erasistratus are considered standard, since he was almost the first to abandon false conjectures and theories [20].

Erasistratus believed that arteries contain "pneuma" ("vital spirit"), which, according to the views of that time, enters the body with air, passes into the left half of the heart and then spreads through the arteries. The wings of the nose were considered the central points of the arteries. This misconception persisted until the Middle Ages [20]. Erasistratus was the author of such Latinized anatomical terms from the ancient Greek language as "anastomosis" ("synanastomosis") and "valvula bicuspidalis".

Herophilus and Erasistratus became the founders of the two main branches of the Alexandrian medical school, which existed until the 2nd century AD [18].

Claudius Galenus (131-201 or 129-199) was the most famous representative of the medicine of Ancient Rome, a Greek by origin, who wrote more than 100 works based on his own observations. He exerted a huge influence on the further development of medicine and anatomy. There is an opinion that in fact, Galen did not bear the name "Claudius", but it appeared in the Middle Ages because of the incorrectly deciphered abbreviation "Cl" ("clarissimus", i.e. "the most glorious"). Such an epithet testifies to the influence and authority (often undeservedly exaggerated) that Galen had among his descendants over many centuries [21].

Galen was born in Pergamum (Asia Minor). At first, his father, a well-known mathematician, philosopher, and architect at that time, took care of his education. Young Galen followed his father's example and became interested in philosophy at the age of 15. However, according to legend, his father had a prophetic dream that Galen should practice medicine, which became a decisive moment in the future fate of the young man: 17-year-old Galen began to study medicine with the best doctors of Pergamum [21].

Over the next ten years, Galen traveled a lot and visited all the main centers of advanced medicine at that time: Smyrna, Corinth, and Alexandria. In 160, Galen returned to his hometown and became a doctor at the school of gladiators. This work allowed him to constantly practice in surgery, as well as gain fame as a doctor skilled in the treatment of dislocations, fractures and various wounds.

Around 163, Galen went to Rome, where, thanks to his diagnostic skills, he quickly became famous both among the Roman nobility and among the common people. This was made possible not least by the lectures he gave in the Temple of Peace, which were accompanied by anatomical and physiological demonstrations – dissections of corpses, as well as vivisections of animals (monkeys, dogs, goats, and even an elephant) conducted by Galen, which attracted a wide audience. It is largely believed that in Rome, Galen studied anatomy on wounded gladiators and the bodies of dead infants that were thrown into the street, as well as the corpses of executed criminals [21].

Galen's anatomical legacy is quite significant: he studied muscles in detail and found out that muscles contain connective tissue fibers and nerve branches. He provided a description of many bones and also gave them names; established that the walls of arteries, stomach, intestines, uterus and other organs are formed by several layers; partially investigated the movement of blood in the body; made a description of the meninges, brain ventricles, cerebellum, cranial and spinal nerves, and also distinguished seven pairs of cranial nerves; found that transection of the spinal cord leads to impaired motor functions, and damage to the vagus nerve leads to loss of voice and sensitivity.

As for personal qualities, Galen was quite vain; he always and everywhere tried to draw attention to himself, so he often made enemies who wanted to get rid of a dangerous rival and competitor. In connection with this, Galen, in order to survive (according to other sources, in order not to catch the plague, the epidemic of which was raging in the city at that time), left Rome and began a journey through Italy [21]. Around 169, the Roman emperor and philosopher Marcus Aurelius invited Galen as the personal physician of his sons Commodus and Sextus. According to legend, one day, when Marcus Aurelius fell ill, Galen was urgently summoned to the emperor, whom other doctors could not diagnose, which greatly embarrassed him. Galen reassured Marcus Aurelius and advised him to drink Sabine wine with pepper. The next day, Galen heard that the emperor considered him not only the first among doctors, but also the only physician-philosopher. There is an assumption that Galen spent the rest of his life in Rome, where his patients were the rich and the Roman nobility. For now, it is not known for sure where exactly Galen died: in Rome or in his native Pergamum [21].

It is worth noting that Galen's works contained huge errors and inaccuracies. For example, he believed that the central organ of the circulatory system is the liver, from which veins branch, and arteries branch from the heart. Despite this, Galen's authority remained undisputed for more than 1,300 years. In particular, medieval doctors in medical practice widely used bloodletting based on a false description of the cardiovascular system left by Galen. If any contemporary anatomist obtained results different from Galen's, they were regarded as a false statement or an anomaly; if this "anomaly" had a permanent character, then it was considered the result of a change in the structure of the human body or degeneration.

Despite this, Galen had a huge influence not only on European, but also on Eastern medicine. It is known that Abu Ali Hussein Ibn Sina (the Latinized form of the



name is Avicenna, 980-1037) – the author of the work “The Canon of Medical Science”, which for many centuries was the basis of medical theory and practice – admired Galen and quoted him about 300 times. Despite this, Avicenna criticized Galen and did not support some of his statements. In particular, he disagreed with Galen’s views on the physiology of pain, the same nature of nerves and tendons, etc. [22]. Galen introduced such terms as “cremaster”, “thalamus”, and “vena azygos” (the terms are given according to modern anatomical terminology).

A significant contribution to the development of anatomy was made by the outstanding Italian figure of the Renaissance Leonardo da Vinci (1452-1519) – a brilliant artist, mathematician, engineer, inventor, and naturalist. In cooperation with Marcantonio della Torre (1481-1511), a well-known professor and anatomy teacher at the Pavia and Padua Universities (1481-1511), Leonardo da Vinci performed autopsies on about 30 corpses, on the basis of which detailed sketches were made (more than 200 drawings have survived to this day).

The period of the 16th-17th centuries. became the so-called golden age of anatomy, because such famous anatomists as Bartolomeo Eustachio (c. 1510-1574), Gabriele Falloppio (1523-1562), Julius Arantio (1530-1589), Volcher Coiter (1534-1576), Hieronymus Fabricius (1537-1619), Caspard Bauhin (1560-1624), Costanzo Varolio (1543-1575) and, of course, Andreas Vesalius (1514-1564), whose name is associated with the “revolution” in anatomy.

The brilliant Flemish surgeon and “father of modern anatomy” Andreas van Wesel (1514-1564) entered the history of world medicine as Andreas Vesalius, or simply Vesalius. Vesalius was born on December 31, 1514, in Brussels in a wealthy family of a doctor (his grandfather) and a pharmacist (his father), who were famous at the time and served the Holy Roman Emperor. Interestingly, translated from Dutch, his surname meant “weasel”, so three weasels were depicted on the family coat of arms [12].

At the age of 14, Vesalius began to study at the Collegium Castellianum, and at the age of 17, he began his training at the Collegium Trilingue, which was founded by Erasmus of Rotterdam [12, 23], where he studied rhetoric, philosophy, and logic. Being a rich young man, he was able to master these sciences in Latin and ancient Greek, as well as Hebrew [12, 23]. It is worth noting the fact that his perfect command of Latin later left an imprint on his style. For example, the Belgian researcher Maurits Biesbrouck in his article “Le premier livre de la Fabrica d’André Vésale et sa première traduction en néerlandais” (“The first book of “The Fabric” by Andres Vesalius and its first translation into Dutch”) writes that for him the biggest shock and the real challenge was that Vesalius wrote in a style that might be called “ultraciceronien”, since a single sentence occupied a third or more of a page, with no hint of visual breaks, indents, or paragraphs [24].

Already during his studies at the Catholic University of Leuven, Vesalius became interested in medicine, so in 1533 he moved to France, where, from 1533 to 1536, he studied medicine at the universities of Montpellier and Paris, which for a long time were considered the leading European medical schools.

It is worth noting that the education at that time was quite peculiar: classes took place in the form of reading excerpts from the works of Hippocrates, Galen, Avicenna, and Rhazes in Latin. However, starting from the 13th century, approaches to teaching anatomy changed, not least thanks to the professor of the University of Bologna, Mondino de Luzzi (Lucci), also known as Mundinus (1270-1326), who created the textbook “Anatomia corporis humani” (1316). First of all, this manual was intended as a guide to the autopsy of the corpses of criminals executed by hanging or infamy. According to the sources, Mondino used in his “Anatomy” five anatomical texts of Galen: “De Sectis”, “De Usu Partium”, “De Juvamentis Membrorum”, “De Interioribus”, “Tegni” [25].

In the context of our research, we consider it appropriate to dwell in brief on certain aspects of Mondino’s “teaching activity”. It is known that he personally supervised the autopsies, delegating the practical aspects to his assistant. The study of the corpse began with a cross-shaped dissection of the abdomen – probably, because it is this part of the body that begins to decompose the fastest. The dissection itself took place over three days, with Mondino sitting in his professorial chair reading a Latin text while his assistant demonstrated the necessary organ at the required time [25].

It is worth emphasizing that the textbook of Mundinus remained almost the only textbook on anatomy for two and a half centuries, in fact, as well as the method of teaching anatomy. Hence, in the 16th century, in Paris, the teaching of anatomy took place approximately as it did two hundred years ago: the surgeon or his assistant was called a “sector” and they performed the autopsy, whereas the professor (“lector”) read the words of Mondino, trying to place his instructions in the broad context of the medical and philosophical knowledge of the time, and the assistant (“ostensor”) demonstrated on the corpse the parts or organs mentioned in the text [12].

Later, Vesalius criticized the conservative system of teaching anatomy. For example, during his studies at the University of Paris, he was present at only three or four autopsies, but they were conducted so quickly that the student did not have the opportunity to carefully examine the intestines and muscles.

One of his teachers was the well-known anatomist Jacques Dubois (1478-1555), who entered the history of anatomy as Jacobus Sylvius, or simply Sylvius. On behalf of Sylvius, Vesalius gave his lectures to students. Vesalius won his first “anatomical victory” at the age of 20, when he proved that the lower jaw is made up of one bone. As a reward for this, he was given the right to practice autopsies on human corpses. As D. Calogirou observes [23], Vesalius searched for and even stole corpses or bones at night. His favorite place of search was the area of Montfaucon (now it is virtually the center of Paris), where the famous stone gallows – “gibet de Montfaucon” – the place of execution of thieves, sacrileges, fraudsters, was built back in the 13th century. Vesalius independently performed the autopsies that barbers used to do [23].

There is a legend that Vesalius studied the bones so carefully that he could identify them by touch. Indirect confirmation of this legend is a little-known fact, which is cited by the historian of medicine D. Calogirou, that in 1536 Vesalius, together with his friend, the mathemati-

cian Gemma, stole the skeleton of a hanged man and it was thanks to this stolen skeleton that he got the opportunity to study the structure of the human body [23].

In 1536, Vesalius returned to Leuven, where he independently gave a course of lectures on anatomy, and also translated and published his first academic work, which was called “Paraphrasis in nonum librum Rhazae” – it was a rather talented and successful correction of the Latin translation of an Arabic treatise on therapy of the famous Persian physician, encyclopedist scientist, alchemist and philosopher Abū Bakr al-Rāzī, known in Europe under the name Rhazes (c. 864 / 865 – 925 / 935), made in 1481, Vesalius tried to smooth out the irregularities of the previous Latin translation and simplify some medical terms [5].

In 1537, Vesalius received an invitation from the Republic of Venice to become a professor of anatomy and surgery at the University of Padua. The “Paduan period” lasted from 1537 to 1543. It was his stay at the University of Padua that helped Vesalius become an anatomist and lecturer, because this institution was famous for its long tradition of academic freedom, and conducting autopsies and teaching medical students on cadavers was mandatory. In 1537, Vesalius received the degree “Medicinae Doctor” (“Doctor of Medicine”) with the distinction “magna cum laude” [8].

In 1538, the work of Vesalius “Tabulae anatomicae sex” was published, which still contained Galen’s ideas and errors. Thus, Vesalius defined the heart as the source of the “vital spirit”, and the pulmonary vein – “arteria venalis” (modern name – “vena pulmonalis”) as a structure that carries air from the lungs to the left atrium and left ventricle: “Arteria venalis in sinistrum sinum aërem ex pulmonibus defērens” [11]. Regarding the structure of the human body, this work was already approaching the “anatomical ideal” of Vesalius, since “Tabula II” (“The Second Table”), dedicated to the liver and vena cava, is based on the results of an autopsy of an 18-year-old boy, which Vesalius conducted in December 1537 in Padua. In the National Library of Vienna there is a manuscript of Comrade Vesalius, in which there is a mention of this dissection [12].

The colossal experience and knowledge of the great Flemish are summarized in the epoch-making anatomical work entitled “De humani corporis fabrica libri septem” (“Seven books on the structure of the human body”), which was illustrated with some drawings by Jan van Calcar (circa 1499-1546), Titian’s student.

As Maurits Biesbrouck and Omer Steeno note, Vesalius had dozens of corpses at his disposal, of which he had at least thirteen before 1543. He obtained these corpses from cemeteries, places of execution or hospitals [7]. Vesalius was helped not only by students and supporters of his anatomical talent, but also by representatives of state and judicial bodies. He used the corpses both for his own scientific purposes and for teaching his students. It is likely that Vesalius was well-versed in issues of comparative anatomy, he observed anatomical variants and studied the anatomy of the fetus. Sometimes he dissected the body to study physiological processes, whereas the autopsy of bodies brought to him by relatives of the dead gave Vesalius the opportunity to better investigate the pathology of the body [7].

Published in 1543 in Basel (where Vesalius went to oversee in person the publication of his masterpiece),

“De humani corporis fabrica libri septem” was the first anatomical book based on direct dissections of human corpses and contained 278 anatomical drawings with extensive explanations in Latin – a total of 716 pages [5]. As the title suggests, in this work Vesalius not only gave a description of the human body according to his own concept of understanding the body as an “architectural structure”, but also corrected more than 200 errors of Galen, as well as other errors that existed in medicine for hundreds of years, starting with Herophilus and Erasistratus and ending with Mondino [26].

It is interesting that “De humani corporis fabrica libri septem” is considered a masterpiece of Renaissance book printing, as well as the fact that the Venetian Senate and personally Charles V, the Holy Roman Emperor, received copyright on this work, which protected Vesalius’ work from unauthorized copying [11, 12].

During his six-month stay in Basel, Vesalius did not stop dissecting. A skeleton personally assembled by Vesalius from the bones of an executed criminal is preserved in the anatomical museum of the University of Basel. This skeleton is considered the oldest anatomical specimen in the world [12].

In the same 1543, in Basel, Vesalius prepared another, not fully appraised, manual for students called “De corporis humani fabrica librorum epitome”, which was an abbreviated version of “De humani corporis fabrica libri septem”. The “Epitome” consisted of eleven woodprints that included illustrations of the skeleton, muscles, nerves, veins, and arteries, as well as nine illustrations from the extended version [12]. This work differed from the previous one in that the muscles were drawn in layers, from superficial to deep, in a natural state of rest, which greatly helped surgeons in operations and wound treatment. Interestingly, Vesalius noted discrepancies between Galen’s descriptions and his own observations. For example, Galen claimed that the uterus contained many small compartments, while Vesalius de visu was convinced that this organ had only one cavity. Vesalius also pointed out Galen’s other mistakes regarding the structure of the hand, chest, pelvis, and heart. Vesalius also ridiculed and rejected Galen’s ventricular theory of cognition in which mental functions were thought to be contained within the cerebral ventricles [10].

Unfortunately, almost immediately after the publication of “De humani corporis fabrica libri septem” Vesalius’ brilliant research came under harsh criticism from the majority of the academic community of that time. For instance, his former teacher Sylvius, a traditionalist and retrograde, who quite seriously claimed that the difference in “Galen’s anatomy” and “Vesalius’ anatomy” was due to the changes that had occurred in the human body over 1300 years, issued a pamphlet against his best student Vesalius, whom Sylvius called “vesanus”, i.e., “crazy” in an assault of malice and desire to hinder the progress of anatomy [23, 27, 28].

Despite the attacks, Vesalius did not stop improving his anatomical masterpiece. For example, in the second edition of “De humani corporis fabrica libri septem” (1555), he corrected his own mistake regarding the structure of the placenta [11, 12].

From 1544 to 1556, Vesalius was the “medicus familiāris ordinarius”, that is, the court physician of King Charles V – one of the most prominent statesmen of the first half of the 16th century, and later of his son Philip

II, the heir to the Spanish throne, with whom he moved to Spain [10].

Vesalius' "Madrid period" lasted from 1559 to 1564. From the beginning of his stay in Spain, he complained that there was not a single human skull to study, and he had no opportunity to perform autopsies, except for the occasional forensic ones. However, Vesalius turned out to be unhappy for another reason – the Spanish court doctors believed that it was impossible to learn something new in anatomy – something that had not been already explained in the works of Galen [10]. In various ways, they demonstrated their contempt for a foreign anatomist who dared to challenge the most respected anatomist, Galen. Unfortunately, Vesalius could not leave the royal court, since resignation was possible only with the consent of the king himself, and for Philip II Vesalius was extremely valuable, given the fame of Vesalius [5].

Despite the recognition and favor of Philip II, it was quite difficult for Vesalius to continue experimental research in Madrid, because in Spain there was a ban on autopsies. The Catholic Church, of which Philip II was an ardent supporter, began to persecute Vesalius because his anatomical descriptions contradicted the biblical account of the creation of a woman from Adam's rib. According to theologians, the number of ribs in a person could not be the same on the right and on the left. Some scholars express the opinion that, unable to respond to the attacks of numerous and authoritative detractors at the time, Vesalius even burned some of his works.

There are several versions regarding Vesalius' decision to make a pilgrimage to the Holy Land. The first version – Vesalius was allegedly accused of having performed an autopsy on a Spanish aristocrat while his heart was still beating. The Spanish Inquisition sentenced Vesalius to death, but the king personally pardoned him and ordered him to go on a pilgrimage to repent of his sinful act [5, 10, 23]. According to another version, Vesalius was seriously ill and decided to go to the Holy Land to recover [10]. The most likely version, according to Charles T. Ambrose, is that Vesalius feigned illness in order to leave Madrid and gain freedom, and the pious Philip II invited him to make a pilgrimage [5, 10].

Whatever the true reasons, in 1564 Vesalius made a pilgrimage to the Holy Sepulcher in Jerusalem. However, during his stay in Jerusalem, he was more interested in local plants than in the pious deeds of a pilgrim. In the future, Vesalius hoped to return to Padua to replace Fallopius as head of the department at the University of Padua. However, the ship on which Vesalius was returning from a pilgrimage was shipwrecked near the Greek island of Zakynthos (Zante). The scientist managed to escape, but he fell seriously ill on the island and died on October 15, 1564, at the age of 49. The brilliant anatomist was buried in an unmarked grave [10].

According to Bruno Splavski and co-authors [10], Vesalius, who was not only the father of anatomy, but also the forerunner of neurology, challenged traditional anatomy and made it a scientific discipline that did not fit into the views and patterns of the time, and also contradicted numerous academic and the religious canons and authority of the Catholic Church. Thus, the historical status quo and political circumstances tragically affected

the scientific and professional career, and the entire life path of Vesalius and led to his premature death.

Vesalius introduced such terms as "atlas", "crista galli", "incus", "malleolus", "os ilium", and "scapula" to modern anatomical terminology.

Bartolomeo Eustachio, known as Bart(h)olomeus Eustachius (c. 1510-1574) was an outstanding Italian doctor, one of the founders of modern anatomy, who corrected some inaccuracies of Vesalius. Although Eustachius and Vesalius were contemporaries, they never worked together [4].

Very little information about Eustachio's curriculum vitae has been preserved. There is information that he studied medicine in Padua and Rome. Later he taught anatomy at the Collegia della Sapienza and personally performed autopsies.

In 1552, Eustachius prepared 47 anatomical drawings for use in a book entitled "De dissensionibus ac controversiis anatomicis", a work that was never published [4].

Being one of the most talented anatomists of his time, in a work published in 1563, Eustachius described the structure of teeth, pulp in particular, periodontal membrane, thoracic duct, abductor nerve, organ of hearing, veins. He was also the first to provide a detailed description of the bones and blood vessels of the fetus [19, 27].

Despite the fact that Eustachius was a supporter of Galen, he managed to enter the history of medicine, primarily as a scientist who made a huge contribution to the study of the morphological structure of the kidneys. Thus, in the work "De renibus" Eustachius gave a thorough description of the size, structure, location of the kidneys. Describing the parenchyma of the kidneys, he distinguished between the external and internal substances, and also recognized the role of the renal arteries in the excretory function of the kidneys. Eustachius left to descendants many appropriate observations "regarding the fine arteries" that filter urine, as well as the functions of the renal tubules [29]. Eustachius is also considered one of the pioneers of comparative anatomy [19].

He accompanied all his studies with anatomical tables with excellent drawings. Unfortunately, only 38 tables have survived from the works of Eustachius, found and published in 1714 by another Italian physician – G. Lancisi under the title "Tabulae anatomicae B. Eustachii, quas e tenebris tandem vindicatas praefatione notisque illustravit ac publicae iuris fecit G.M. Lancisi" ("Anatomical tables of B. Eustachius, which he finally freed from darkness, accompanied with a preface and notes and presented to G. Lancisi for the public consideration") [19, 27]. At the end of his life, Eustachius realized the falsity of many of the statements of his idol Galen.

Anatomy owes Eustachius the term "isthmus", which was proposed by him to describe the formation connecting the two lobes of the glandula thyroidea (thyroid gland). The Eustachian tube (tuba Eustachii) was named in his honor (the modern official anatomical term is "tuba auditiva").

A notable role in the development of anatomy belongs to Gabriel(l)e Falloppio (1523-1562), who entered the history of anatomy as Fallopius. Fallopius was born in the Italian city of Modena. When Gabriel(l)e was 10



years old, his father died of syphilis, so the boy experienced financial hardship for a long period and was forced to choose a career as a priest. However, when his financial situation improved, Fallopius began to study medicine in Modena. According to sources [9], Fallopius studied anatomy on the corpses of executed criminals, whose autopsies he performed himself.

In 1540, Fallopius went to Ferrara, which had one of the best medical schools of that time. In 1546, Fallopius was appointed head of the department of anatomy and surgery at the University of Pisa. It is known for certain that during his stay in Pisa for three years, he conducted vivisections. In 1551, the Senate of Venice granted Fallopius the right to become a professor of anatomy, surgery and botany at the University of Padua [6].

In his work "Observationes anatomicae" ("Anatomical observations"), which was published in 1561, he first gave a detailed description of the sphenoid and temporal bones, the tympanic cord and the tympanic cavity, the inner ear, the lacrimal bone and the lacrimal canal [27]. His name is also associated with the study of the greater petrosal nerve canal, the inguinal ligament, the description of the genitals, in particular the uterine tubes (fallopian tubes) [19].

A certain drawback of Fallopius's work was the lack of anatomical drawings. However, this does not reduce his contribution to anatomy. Among other things, Fallopius became the first anatomist who, a hundred years before the English physician and researcher Thomas Willis (1621-1675), also known as Willisius, described the structure of the brain, which is now known as the polygon of Willisius [9], explained the process of ossification of the occipital bones and sternum, the process of tooth development. In addition, Fallopius corrected some of Vesalius' errors [9]. Such scientific achievements became possible thanks to the fact that Fallopius

made many dissections of fetuses, infants, children and adults.

Unfortunately, the name of this outstanding anatomist is somewhat tarnished in history because he studied the effects of poisons on criminals sentenced to death. Despite this, "his beautiful works show that he was an extremely modest scientist, one who treats other people's works with great respect" [19]. Fallopius died of tuberculosis at the age of 39. He introduced into anatomy the terms "placenta", "vagina" [6], and "tympanum".

### Conclusions.

Biographies of outstanding personalities serve as both a means and a source of historical knowledge, which acquires special importance in the process of training future doctors, because medicine maintains an inseparable connection between the past and the present, and any scientific discoveries accumulate or nullify the achievements of predecessors. On the one hand, biographical method is aimed at realizing the role of the individual in history, and on the other – at understanding the influence of history, in fact, society, at a specific stage of its existence, social contexts, ethical rules and norms, society on the formation of an individual and his life path, choosing a life position, ideals and values, dialogue between an outstanding personality and contemporaries. Reconstructing the curriculum vitae, the biographical method enables the reproduction of the socio-political and socio-cultural contexts in which scientific discoveries, cultural and other achievements arose and spread, serving as one of means of forming the professional personality and professional identity of the future doctor, in particular, in the process of studying anatomy and disciplines of the foreign language training cycle.

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### БІОГРАФІЧНИЙ МЕТОД ЯК ЗАСІБ ФОРМУВАННЯ ПРОФЕСІЙНОЇ ОСОБИСТОСТІ ТА ПРОФЕСІЙНОЇ ІДЕНТИЧНОСТІ МАЙБУТНЬОГО ЛІКАРЯ (на прикладі інтеграції вивчення анатомії людини та дисциплін циклу іншомовної підготовки)

Беляєва О. М., Білаш С. М., Проніна О. М., Лисанець Ю. В., Білаш В. П., Гаврильєва К. Г., Таран З. М.

**Резюме.** У статті проаналізовано curriculum vitae найвидатніших представників медицини різних історичних епох з акцентом на їх внесок в анатомію і медичну термінологію в конкретних соціально-культурному й історичному контекстах. Наголошено, що в умовах антропоцентричної парадигми історично орієнтовані персоніфіковані дослідження визнаються одним із найбільш перспективних напрямів наукових пошуків, в яких рефлексія минулого здійснюється через вивчення унікальної та неповторної історії життя і діяльності людини, яка, з одного боку, є творцем історії, з іншого, – її носієм, що зумовлює актуальність використання біографічного методу як одного з інструментів формування професійної особистості та професійної ідентичності, що, з-поміж іншого, формується зі посиланням на загальну історію, яка пояснює та узаконює місце професій у суспільстві. Авторами досліджено біографії видатних анатомів у контексті розвитку анатомічної науки, починаючи від Античності до Пізнього Середньовіччя: Арістотеля (384-322 рр. до н. е.), Герофіла (бл. 300 – бл. 250 рр. до н. е.), Ерасістрата (III ст. до н. е.), Галена (131-201 рр. або 129-199 рр.), Євстахія (бл. 1510-1574), Фаллопія (1523-1562), Везалія (1514-1564) та інших. У роботі використано загальнонаукові методи – аналіз, синтез, систематизація, узагальнення, аналіз літературних джерел, пошуково-бібліографічний, а також спеціальні методи – історико-порівняльний, біографічний, інтерпретативний. Ознайомлення з curriculum vitae видатних медиків, має давню традицію, позаяк медицина як, можливо, жодна з інших наукових галузей, зберігає нерозривний зв'язок між минулим і сьогоденням, адже сучасні наукові дослідження, з одного боку, ґрунтуються на відкриттях і досягненнях представників інших епох, поколінь, наукових шкіл, а з іншого, без помилок попередників і бажання їх виправити чи спростувати хибні теорії та гіпотези, неможливий рух уперед. Показано, що використання біографічного методу в процесі вивчення анатомії та дисциплін циклу іншомовної підготовки слугує одним із засобів формування професійної особистості та професійної ідентичності майбутнього лікаря.

**Ключові слова:** біографічний метод, здобувачі вищої медичної освіти, анатомія людини, дисциплін циклу іншомовної підготовки.

### THE BIOGRAPHICAL METHOD AS A MEANS OF FORMING THE PROFESSIONAL PERSONALITY AND PROFESSIONAL IDENTITY OF THE FUTURE DOCTOR (as exemplified by the integration of the study of human anatomy and the disciplines of the foreign language training cycle)

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**Abstract.** The article analyzes the curriculum vitae of the most outstanding representatives of medicine in different historical eras with an emphasis on their contribution to anatomy and medical terminology in specific socio-cultural and historical contexts. It is argued that in the conditions of the anthropocentric paradigm, historically-oriented personological studies are recognized as one of the most promising directions of scientific research, in which the reflection of the past is carried out through the study of the unique history of the life and activity of a person who, on the one hand, is the creator of history, and on the other – its carrier. This determines the relevance of the use of the biographical method as one of the tools for the formation of professional personality and professional identity, which, among other things, is formed regarding the general history that explains and legitimizes the place of professions in society. The authors studied the biographies of prominent anatomists in the context of the development of anatomical science, from Antiquity to the Late Middle Ages: Aristotle (384-322 BC), Herophilus (c. 300 – c. 250 BC), Erasistratus (3rd century BC), Galenus (131-201 or 129-199), Bartolomeo Eustachio (ca. 1510-1574), Gabriele Falloppio (1523-1562), Andreas Vesalius (1514-1564) and others. The research relies on the following general methods: analysis, synthesis, systematization, generalization, bibliographic search, analysis of literary sources; as well as special methods: historical and comparative, biographical, and interpretative. Overview of the curriculum vitae of outstanding doctors has a long standing tradition, since medicine, perhaps like no other scientific field, maintains an inseparable connection between the past and the present, because modern scientific research, on the one hand,



is based on the discoveries and achievements of representatives of other eras, generations, scientific schools, and on the other hand, forward movement is impossible without the mistakes of predecessors and the desire to correct them or refute false theories and hypotheses. The study demonstrated that the use of the biographical method in the process of studying the anatomy and disciplines of the foreign language training cycle is an effective means of forming a professional personality and professional identity of the future doctor.

**Key words:** biographical method, students of medical HEIs, human anatomy, disciplines of the foreign language training cycle.

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Conflict of interest:

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