

Research of Ethical Competence of Future Doctors at Medical Universities

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Abstract: The article reveals a study of the ethical competence formation of students at medical universities. This competence includes theoretical knowledge of professional ethics, professional and ethical value orientations, moral and personal qualities and practical skills of a doctor in the professional activity. Formation of ethical competence provides for the doctor's conscious ethical behavior in accordance with professional and ethical standards, as well as the need for professional and ethical self-improvement throughout life. The results of the study allowed to establish the availability of reserves to improve the quality of future doctors' training and formation of their ethical competence. Taking into account the trends of globalization of the educational sphere, the impact of postmodernism on the formation and development of value orientations of student youth, the emergence of new forms of ethical values, etc., it is assumed that the this competence formation will be effective if at different stages of students' training at medical universities there will be introduced pedagogical conditions that enhance functioning of the main subsystems of the educational process. These stages correspond to the peculiarities of students' professional and personal development during different years of study and in view of their cognitive abilities. Experimental verification of the effectiveness of pedagogical conditions for the formation of future doctors' ethical competence at medical universities confirmed the validity of the research hypothesis. At the same time summarizing of the research results revealed certain influence of the tendencies of traditionalism, universalism and pragmatic motives on the future doctors' value-motivational sphere.

Keywords: *ethical competence; future doctors; pedagogical conditions; medical universities; postmodernism; value orientations.*

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1. Introduction

Globalization tendencies of the European and world educational space, the impact of postmodernism on the formation and development of students' value orientations, the emergence of new forms of ethical values and moral guidelines in the age of social constructivism, and the spread of the idea of denying traditionalism and universalism of ethical principles affect the processes of moral and ethical doctors' training, the quality of their medical service and the competitiveness of medical university graduates. The results of the analysis of scientific works of some representatives of the postmodernism (Bauman, 1993; Kearney, 1987; Oelschlaeger, 1995; Singer, 1993) allow us to assert that this philosophical approach considers normative ethics (formulates moral principles, defines the methods of rational thinking called to find the correct solutions of moral dilemmas, which often arise, in particular, in medical practice) as one that deals with the fruitless search for a single moral principle or a rationally consistent system, because a single ethical system simply doesn't exist. Therefore, no particular ethical metanarrative deserves epistemological trust (Vinkvist & Teilor, 2003). The results of the analysis of educational programs for students at medical universities indicate that a modern doctor must have not only cognitive and behavioral skills of clinical decision-making, but also skills of ethical behavior in the process of professional interaction with patients, their relatives and colleagues, they must master highly developed communication skills, adopt professional moral and ethical attitudes, possess formed professional value orientations. Thus, a modern doctor must have a high level of ethical competence in various types of professional activity, i.e. a holistic individual-psychological integrative multilevel education, that is the result of continuing medical education. This competence includes theoretical knowledge of professional ethics, professional and ethical values, moral and personal qualities and practical skills of a doctor in the field of professional activity, provides him with a choice of conscious ethical behavior in accordance with professional and ethical standards, as well as the ability to self-realization. ethical self-improvement throughout life. However, in modern conditions, when moral beliefs, values and approaches change from culture to culture, from one historical period to another, and perhaps even from situation to situation, it is of high importance to form ethical competence of future physicians. It is formed as the result of students' acquisition of knowledge, skills and abilities on the problems of professional ethics in modern medicine, which future doctors should be aware with. i.e. the problems of drug therapy; ethical

issues of health service organization; application of genetic engineering methods; surrogacy; embryonic tissue transplantation; controlled interruption of life (euthanasia); organ transplantation; production and distribution of untested drugs (for example, in the context of COVID-19 spread), research on the new drugs effects on the human body and mind with the participation of volunteers; over-the-counter medications, etc. However, the results of a pilot study indicate that medical university graduates do not always demonstrate a high level of ethical competence in practice. Taking into account all the above mentioned, the article presents the study results of the effectiveness of the ethical competence formation of future doctors at medical universities, in particular pedagogical conditions that enhance the functioning of content, activity and effectiveness of the educational process subsystems.

1.1. The Aim

The aim of the article is to present the results of the study of formation of future doctors' ethical competence by gradual introduction of the pedagogical conditions at different stages of students' training at medical universities.

1.2. Tasks

1. to clarify the content of doctors' ethical competence and to determine the diagnostic apparatus for the study of its formation in students at medical universities.
2. to substantiate pedagogical conditions of future doctors' ethical competence formation at medical universities and to define stages of their introduction.
3. to study the effectiveness of pedagogical conditions for the formation of future doctors' ethical competence at medical universities.

2. Literature review

The problem of doctors' professional culture formation, professional and ethical competence and their ethical behavior has repeatedly attracted the scientists' attention. Especially interesting in the context of the research were the works on the problems of forming doctor's personality in the sphere of deontology, bioethics and medical ethics. These aspects have recently been the subject of attention of many scientists, in particular studies of the tendencies of future doctors' ethical competence formation at medical universities in Europe and the USA (Dudikova, 2017); substantiation of the

pedagogical conditions of the introductions of interactive learning in the process of professional training of nurses (Kaidalova & Shyshman, 2015); study of the development of ethical competence in health care organizations (Kälvemark-Sporrong et al., 2007)., the issues of evolution and prospects for the development of ideas about ethical competence and moral distress in the health care (Kälvemark-Sporrong, 2007), determining the features of integration of general scientific approaches to formation of professional competence of future doctors (Melnychuk et al., 2021) and others.

The scholars present ethical considerations on the development of cognitive ability, some specific features of the information and communication technologies in ethical competence training, some specific features of ethical competence in the field of biological research, an integrative review of ethical competence and its content (Lechasseur et al., 2016; Kaups, 2016; Milton, 2016). The results of the development of nurses' ethical competence was performed through a cross-sectional survey on organizational and individual support (Poikkeus et al., 2018), also researches explore ethical competence in the nursing practice in the context of their decision-making (Robichaux, 2017).

At the same time, there is no comprehensive study of the formation of future doctors' ethical competence at medical universities under conditions of value orientations transformation of students under the influence of modern cultural, socio-economic and globalization conditions. Taking all this into consideration, it is important to test the hypothesis that the formation of ethical competence of future physicians will be effective if at different stages of students' training at medical universities there will be gradually introduced pedagogical conditions, that enhance the functioning of content, activity and effectiveness subsystems of the educational process.

3. Research Methods

The study provided for introduction of pedagogical conditions at different stages of student learning. These pedagogical conditions were aimed at activating functioning of the content, activity and result subsystems of the educational process.

To achieve this goal and tasks a number of research methods have been used. Concerning the theoretical ones, they are analysis, synthesis and comparison. They are used to clarify the state of development of the research problem in pedagogical theory and practice. Methods of systematization and generalization of theoretical provisions are used to clarify the pedagogical essence of key concepts of the research (professional

and ethical competence of doctors) and scientific substantiation of pedagogical conditions for the formation of professional and ethical competence of students of medical universities.

The study also used empirical methods to obtain quantitative (numerical) research data (grades and scores), in particular: surveying students (to measure the quality of their knowledge of professional ethics), solving situational ethical learning tasks and project implementation (to measure quality of the skills and abilities formation). The use of these methods is due to the fact that professional and ethical competence includes theoretical knowledge of professional ethics and practical skills and abilities of a doctor in the field of professional activity. The tools for the survey were sets of control questions (taking into account the indicators of the cognitive component of professional and ethical competence) and author's tests. In terms of design, the tests were open and closed), and regarding their types, in order to conduct research in different courses of study were used: recognition tests (requiring an alternative answer: "agree" or "disagree", "yes" or "no"), differentiation tests (containing answer options, from which a student have to choose one or more), and task tests (in order to complete which a student is given the conditions of the task, source data and answer options in numerical or alphabetical form. A student has to choose the correct option or choose the correct sequence of actions and operations.

Before conducting the research activities, a template of the consent form from the students-participants of the experiment regarding permission to use the data for research was filled out.

Besides, since the structure of professional and ethical competence defines professional and ethical value orientations and moral and personal characteristics, the following research tools were used to collect data: "Express diagnosis of social values of the individual", "Express-diagnostics of the level of social isolation of the individual" (Russell et al., 1984), methods of studying the ability for self-management in communication, methods of "Determining the index of group cohesion" (Seashore, 1954), "Test-questionnaire of the professional orientation level" (Dubovytska, 2004), methods "Satisfaction by elected profession" (Raigorodskii, 2002). These research tools were tested to diagnose the level of professional orientation of students (Balendr et al., 2018; Dubovitskaia, 2004; Khoruzha, 2004; Soroka et al., 2019).

A survey method was also used to collect data. The tools used were Google Forms and Formplus Builder questionnaires of various formats: with one or more answer options or with a choice of answer from the drop-down list.

To identify differences in the distribution of empirical series, to compare samples with alternative features, as well as to verify the probability of the study results we used methods of mathematical statistics - Pearson's χ^2 criterion.

The study lasted from April 2014 to May 2020. It involved 312 students at Vinnytsia National Pirogov Memorial Medical University and I. Horbachevsky Ternopil National Medical University. All participants declared their agreement to participate in the study. After that, the participants were divided into two experimental groups: the first experimental group (hereinafter, EG_1) included 157 participants of I. Horbachevsky Ternopil National Medical University and the second experimental group (hereinafter, EG_2) including 155 participants from Vinnytsia National Pirogov Memorial Medical University. The level of ethical competence and other qualitative characteristics (age, gender, level of academic achievement, learning conditions) of both experimental groups did not differ significantly.

Diagnostics of the ethical competence formation was carried out taking into account the indicators of its main components, i.e. cognitive, activity, motivational and value ones.

4. Results of the Research

According to the first task, the study took into account the characteristics of ethical requirements for the doctor's professional activity and the analysis results of the publications on the research problem. The results of the generalization revealed that the ethical competence of a doctor is a holistic individual-psychological integrative multilevel formation, which is the result of continuing medical education. This competence includes theoretical knowledge of professional ethics, professional and ethical value orientations, moral and personal qualities and practical skills of a doctor in the field of their professional activity. The formation of ethical competence will provide doctor's conscious ethical behavior according to the professional ethical standards, as well as the need for professional and ethical self-development throughout life. Such conclusions were made taking into account the publications of Aharkova (2011); Sysoieva (2015), Lechasseur et al. (2016).

As a result of the analysis and generalization of official documents regulating the training of healthcare professionals, in particular educational programs, the content of the ethical competence of a doctor has been determined. Using the methods of systematization, classification and

generalization, it has been established that the structure of this competence can be divided into four components, such as cognitive, activity, motivational and value ones. The content of the cognitive component is formed by certain knowledge, in particular knowledge of the basics of ethics; methods and techniques of applying ethical knowledge in practice; basic principles and norms of ethics; basics of axiology; tactics and strategies of communication, communicative behavior; specifics of ethics as a form of social consciousness that reveals the essence of the world and creates rational preconditions for understanding the goals and meaning of life.

Skills and abilities form the content of the activity component. These are analytical, prognostic, reflective, informational, perceptual, communicative skills that ensure ethical behavior and effective interaction with patients, colleagues, medical administrative staff and other people.

Motivational and value components include social motives, the desire to treat others, the ability to communicate and help people, the ability to care for the health of friends; scientific and educational motives, in particular motives for choosing a profession to solve scientific problems, for studying new diseases and ways of treatment, the desire to learn something new, to improve their skills; motives for choosing a profession; opportunity to take care of one's health and family; desire to make a career and influence other people; foundation of one's own clinic, etc.

Taking into account the content and structure of ethical competence for the diagnosis of its formation, indicators for obtaining numerical values of each component have been determined. In order to determine indicators correctly we have employed the method of questionnaire survey, to which we involved the most competent specialists – teachers from the Department of Philosophy and Sociology, Department of Neurology, Department of Internal Medicine, Department of Therapy, Department of Pediatric Infectious Diseases and others. The participants were selected according to such requirements as awareness, professional competence, the experience in such surveys, the positive attitude to the examination. Google Forms questionnaires with multiple-choice answers and a choice of answers from the suggested list were used as a tool for surveying.

According to the results of the survey assessment, were determined the indicators of the cognitive component: students' knowledge of the basics of axiology, ethics and etiquette; knowledge of ethical regulatory requirements for the doctor's profession and oath; knowledge of ethical rules for interaction with people and organization of professional duties; knowledge of strategies and methods for resolving ethical conflicts.

The indicators of the activity component were determined as follows: the ability to apply knowledge of professional ethics to solve problems in medical practice; ability to conduct a dialogue and discussion, use etiquette rules; ability to reflect on ethical situations when interacting with people and organizations performing professional duties; ability to resolve ethical conflicts, to maintain and to analyze ethical processes in the organization.

As for the motivational component, its indicators are: the desire of students to take responsibility for moral and ethical decisions in difficult life situations; desire to treat and help people; occupational satisfaction index; awareness of the social significance of the medical profession.

Indicators of the value component of ethical competence are: the value attitude to the profession, understanding and realizing the importance of doctor's tasks; lack of pragmatic values; awareness of the value of patient's life and health.

Taking into account the data of the scientific literature for the possibility to obtain numerical values for each of the indicators and their generalization by levels of ethical competence formation we used Harrington's scale, interval discrete verbal-numerical scale consisting of five intervals of a single segment characterizing the degree of approximation to a certain ideal. The use of this scale allowed the formation of ethical competence to be distributed by levels, i.e. threshold (0 - 0.2), low (0.21 - 0.37), medium (0.38 - 0.63), high (0.64 - 0.8) and very high (0.81 - 1.0).

Elaboration of the diagnostic apparatus allowed us to conduct the initial stage of the research in December, 2014, results of which are summarized in Table. 1.

Table 1. Distribution of Participants by Levels of Ethical Competence Formation at the Initial Stage of the Research

Source: Authors' own conception

Levels	Experimental group_1 (n=157)	Experimental group_2 (n=155)	Total
Very high	19	17	36
High	46	48	94
Medium	61	59	120
Low	23	24	47
Threshold	8	7	15

The data presented in the table allow us to conclude that there is no significant difference in the distribution of the participants in the control and experimental groups according to the levels of ethical competence formation at the initial stage of the research. This conclusion confirms the application of mathematical statistics methods (Pearson's criterion), the calculation of which is presented in Table. 2.

Table 2. Results of Analysis of Levels of Ethical Competence Formation at the Initial Stage of the Research

Source: Authors' own conception

Ethical competence formation level	Empirical frequency	Theoretical frequency	$(f_{\text{Э}} - f_{\text{T}})$	$(f_{\text{Э}} - f_{\text{T}})^2$	$(f_{\text{Э}} - f_{\text{T}})^2 / f_{\text{T}}$
Very high	19	18.12	0.88	0.77	0.042
Very high	17	17.88	-0.88	0.77	0.043
High	46	47.3	-1.3	1.69	0.036
High	48	46.7	1.3	1.69	0.036
Medium	61	60.38	0.62	0.38	0.006
Medium	59	59.62	-0.62	0.38	0.006
Low	23	23.65	-0.65	0.42	0.018
Low	24	23.35	0.65	0.42	0.018
Threshold	8	7.55	0.45	0.2	0.026
Threshold	7	7.45	-0.45	0.2	0.027
Total	312	312	-	-	0.258

Result: $\chi^2_{\text{emp}} = 0.26$. The critical value of χ^2 at $v = 4$ at the level of significance $p = 0.05$ is 9.49, and at $p = 0.01$ it is 13.28. These results indicate no difference between the experimental groups.

At the same time, the obtained results allow us to conclude that in the educational process of the medical universities there are reserves for improving the quality of future doctors' training and ensuring their ethical competence formation.

Taking into account the results of generalization of scientific research by Aharkova (2011), Dubovitskaia (2004), Khoruzha (2004),

Kaidalova & Shyshman (2015), as well as the results of empirical experience at the initial stage of research at I. Horbachevsky Ternopil National Medical University and Vinnytsya National Pirogov Memorial Medical University, the study puts forward the following assumption: formation of ethical competence of future doctors will be effective if at different stages of educational process at medical universities there would be implemented pedagogical conditions that activate functioning of the main subsystems of the educational process - content (determines the set of attitudes, values, experience and knowledge), activity (characterizes the forms, methods, means of interaction aimed at achieving goals and objectives, mastering the content of the pedagogical process) and result (represents the achieved results and the degree of effectiveness of pedagogical process). In fact, it is a matter of consistent and gradual influence on the main components of the pedagogical process in order to more effectively form ethical competence.

Regarding the stages of consistent influence on the formation of ethical competence of future doctors, they were determined taking into account the following factors: features of professional training of students in medical universities; the specifics of their development and formation as future doctors at different courses of study; stages of successive changes in students' thinking during training.

As for the pedagogical conditions that activate functioning of the content, activity and result subsystems of the educational process, they were determined taking into account the results of generalization of scientific research by Aharkova (2011), Dubovitskaia (2004), Khoruzha (2004), Kaidalova & Shyshman (2015), as well as the results of empirical experience at the initial stage of research at I. Horbachevsky Ternopil National Medical University and Vinnytsya National Pirogov Memorial Medical University. In addition, to determine the pedagogical conditions, a questionnaire method was used, which involved the most competent specialists - teachers of humanities departments of medical universities. The questionnaire tool was Google Forms questionnaires with several answer options and a choice of answers from the suggested list. According to the results of the study, it is concluded that the formation of ethical competence of future doctors will be effective if the pedagogical conditions are implemented in three stages.

The first, initial, stage covers 1st -2nd years of future doctors' training. In the 1st year they are involved in student's life forms, adaptation to the academic conditions at medical institutions of higher education. At the same time, according to the scientific research (Khoruzha, 2004; Razdorskaia, 2009), the behavior of most students is characterized by a high degree of conformism and an undifferentiated approach to their new social roles – a

student, a future doctor. Studying during the 2nd year is characterized by the most intense educational activities and is associated with the intensive student's involvement in all forms of training, practice and education. Students receive general higher education and general medical training. This affects the development of their cultural and professional needs and interests. The process of adaptation to the conditions of higher education is generally completed during this year of study. Students have practice in pediatrics (caring for patients). Taking this into account, according to the author's technology, the first stage involves acquainting students with the key concepts of professional ethics in the classroom, extracurricular and practical activities, educating a positive attitude to medicine, developing moral and ethical ideas about medicine in historical retrospect, ensuring the favorable functioning for the formation of professional and ethical competence in the educational university environment. According to the author's idea, the introduction of the following pedagogical conditions leads to implementation of the aims at the initial stage:

- stating the purpose and tasks of the ethical competence formation, taking into account the taxonomy of aims and professional functions that will be performed by future doctors during their professional activity;
- selecting and structuring of the content of the humanities in accordance with the value orientations of social and communicative interaction of future doctors with patients;
- activating students' motivation to study topical issues of professional ethics in modern medicine;
- training of the scientific teaching staff for the ethical competence formation of future doctors;
- establishing subject-subject interaction of students and teachers in order to keep ethical behavior in future professional activity;
- using modern dialogue methods, techniques, forms of pedagogical interaction.

The second cognitive-exploratory stage covers 3rd – 4th years of the future doctors' training. During the 3rd year students show more interest in the scientific work, indicating the development and increase of students' professional interest. They become more interested in their future specialization, demonstrate interest in medical specialties. Sometimes this leads to the narrowing of professional interests, and the formation of the future doctor's personality is generally determined by the factor of the

specialization. Students study foundations of bioethics and ethical issues in medicine, reevaluate the experience gained in the practice of patient care and get the opportunity to gain practical experience in applying ethical knowledge, skills and abilities. The 4th year of study is characterized by an intensive search for more rational ways and forms of special training. During this year of study, students re-evaluate life and professional values. Future doctors study the block of disciplines of internal medicine. This stage involves the formation of future doctors' skills and abilities to use the acquired knowledge to solve ethical situations in their professional activity, as well as the development of the ability to adhere to moral and ethical principles in medical practice. According to the author's technology, the achievement of the goals of the cognitive-search stage is ensured by the introduction of the following pedagogical conditions:

- applying innovative forms and methods of teaching so that students master the skills and abilities of the ethical behavior;
- modeling classes that simulate professional activities based on the use of information and communication technologies;
- solving by students the tasks (problems) of ethical character gradually complicating their content at each period of study;
- organizing favorable educational environment for the ethical competence formation at the university.

The third stage – basic (determinative), covers the 5th - 6th years of future doctors' training at medical universities. The 5th-year-students become aware of the prospect of graduating from university; they choose their future specialization, are given clear practical guidelines for future specialization of their professional medical career. At the same time, they reveal new, relevant value orientations related to the financial and family status, future place of work, etc. During the 6th year of study medical students follow the specialization, have practice in clinical institutions, carry out out-patient reception of patients, and prepare for the state exams. In the educational process there are used situational tasks, tests of different levels, outpatient cards of the thematic patients, videos, multimedia presentations. Each student makes an outpatient care report that contains some data on the main complaints, history, objective status, laboratory and instrumental examination, substantiation of the diagnosis, identification of the main risk factors for the disease, development of rehabilitation measures and programs of dispensary observation, etc. This stage involves the consolidation of ethical skills and further development of motivation for the professional activity, taking into account the ethical principles of medical

care; introduction of the training program and professional creative tasks that simulate situations of applying medical ethics. Taking into account these features for achieving the goals of the basic stage it was proposed to introduce the following pedagogical conditions:

- modeling the content of classes based on an interdisciplinary approach that simulates situations applying medical ethics;
- introducing an optional special course for proper mastering ethical norms of the professional activity;
- monitoring the quality of future doctors' professional and ethical competence formation;
- introducing a training program promoting the development of future doctors' professional ethics.

In accordance with the third task of the study, there was conducted a research of the effectiveness of the pedagogical conditions for the future doctors' ethical competence formation at medical universities.

For this purpose, from September, 2014 to May, 2020, the pedagogical conditions for the future doctors' ethical competence formation were implemented in the educational process of I. Horbachevsky Ternopil National Medical University and Vinnytsya National Pirogov Memorial Medical University.

So, at the initial stage there was used the potential of such subjects as "History of Medicine", "Sociology and Medical Sociology", "Fundamentals of Psychology. Fundamentals of Pedagogy" (1st year), "Patient Care. Practical Pediatrics", "Forensic Medicine", "Premedical Care in Emergency Situations" (2nd year). Through consistent revealing of the content of moral values students acquired moral positions, views, in particular on such important issues as the purpose and meaning of their professional activity, the essence of doctor's moral standards, moral beliefs, actions, behavior, moral duty. In this way, knowledge became the impetus for the formation of future doctor's personal position, the basis for the formation of their moral beliefs.

At this stage it was important to conduct for the teaching staff the thematic seminar "Future Doctor's Ethical Competence and Current Issues of its Formation". The purpose of the seminar was to provide teachers with methodological assistance materials on the methods of ethical competence formation during the educational process, as well as analysis of the psychological and pedagogical characteristics of students and medical staff.

The second, cognitive-exploratory stage of implementation of the pedagogical conditions was carried out on the basis of students' studying the

following subjects: "Fundamentals of Ethics and Biosafety", "Ethical Problems in Medicine", "Medical Psychology" (3rd year), "Pediatrics", "Social Medicine and Organization of Public Health Services", "Internal Medicine (General Medicine)", "Physical Rehabilitation, Sports Medicine" (4th year). At this stage the problem-based teaching methods were used. Involving students in the problematic situation of making their choice facilitated mainstreaming the sense of their professional and ethical values. These methods allowed to consolidate students' moral standards, as they were aware of the problem and solved it quite effectively.

Also were used role play methods, during which students performed the roles of a doctor, a patient, a relative, in such a way developing their knowledge, skills, experience. Through role-playing students learned the appropriate professional action patterns, produced more effective options for professional activities, which assisted in finding its meaning and the ethical competence formation.

It was important to organize students work regarding solving problems of professional and ethical nature with the gradual content complication in each year of study. These were essential tasks for content design and method selection of doctor's professional activity in different situations; tasks on the choice of techniques and methods of influencing patients; tasks for organizing team activities; tasks for developing independence in decision-making, etc. The content of all tasks was determined by the content of the situation and professional activity.

At the determinative stage of implementation of the pedagogical conditions which was realized through the disciplines "Military Surgery", "Emergency and Emergency Care" (5th year), "General Practice (Family Medicine)", "Psychiatry with the Basics of Psychotherapy" (6th year) was conducted an optional special course for proper mastering professional ethical norms. The special course was based on modular training, which included practical and test classes. For the seminars there was developed training and material support including mini-lectures, tasks with elements of moral choice, professional and ethical tasks and tasks simulating the doctor's professional and ethical activities, as well as control tasks and questionnaires.

The special course included four modules: "History of Ethical Studies in Medicine", "Medical Ethics in Doctor's Professional Activity", "Complex Issues of Medical Ethics in Modern World" and "Communication in Medicine and Ethical Aspects of Doctor-Patient Communication". The structure of classes included a theoretical part (mini-lectures), practical tasks and exercises (analysis of specific and simulated situations), tests. At the special course, the material was consolidated in

practical classes and psychological trainings, during which students solved professionally oriented problems of an ethical nature. Additional acquaintance of students with professional and ethical issues broadened their understanding of doctor's ethical behavior, which became the basis for the formation of skills, abilities and reflection of their future professional activity.

At this stage of the study, the learning technologies were used to meet student's individual educational needs, their self-development and self-improvement. First of all, these included training in cooperation (collaboration), multilevel training and projects technology, that covered a set of exploratory, research and problem-based methods. They helped students to master a certain area of practical or theoretical knowledge of the professional ethics foundations. The method of projects was focused on individual student's activity, on solving this or that important practical and theoretical problems of professional ethics. The projects resulted in a videofilm, an album, a magazine, a computer newspaper, a report, etc.

Regarding individual research work as a means of forming ethical competence, the students conducted scientific work, imitated actions of a doctor of a certain specialization in situations of professional and social moral ethical interaction; did research tasks during practice, made scientific reports, presentations and abstracts on current issues of professional ethics and presented them at scientific seminars and conferences.

To form the ethical competence of future doctors, a training program to promote the development of professional ethics was introduced, it contained the following components: "Ethics of Business Communication of a Doctor", "Moral and Ethical Requirements for a Medical Professional", "Professional Values of a Medical Worker", "Culture of Communication of Medical Professionals with Patients". At the training classes students analyzed common situations in doctor's professional activity. During trainings, there was provided students' active participation, as well as the role play nature of interaction, students imitated their actions true for real life and professional situations. Each lesson provided a reflection, i.e. the future medical professionals analyzed their actions, their logic patterns and the other participants' actions during the training.

An important part of training is the formation and development of communication skills. That is why training has become an important tool for interactive learning, which has allowed future physicians to develop their individual communication styles with colleagues and patients, active listening skills, the ability to ask questions and provide feedback, etc. Trainings through modeling real life situations of moral choice allowed to teach

applied ethics to future doctors in the most effective way. The students also had an opportunity to realize their own motives and to “reassess values” in relation to themselves, the meanings of their lives, other people and professional activities.

In general, gradual introduction of pedagogical conditions (aimed at enhancing the functioning of content, activity and result subsystems of the educational process) has become a means to increase the level of ethical competence of future doctors in the educational process of medical universities.

At the final stage of the study, a repeated measurement of the formation of ethical competence of students of I. Horbachevsky Ternopil National Medical University and Vinnytsya National Pirogov Memorial Medical University was conducted. At this stage of the study, 307 students participated (five less than at the initial stage of the study due to expulsion from universities for various reasons).

The results of the distribution of study participants according to the levels of formation of ethical competence at the initial and final stage of the study are presented in table 3.

Table 3. Distribution of Participants by Levels of Ethical Competence Formation at the Initial and Final Stage of the Research

Source: Authors' own conception

Levels	Initial stage (n=312)	Final stage (n=307)
Very high	36	111
High	94	91
Medium	120	72
Low	47	24
Threshold	15	9

The statistical significance of the changes revealed in the result of the analysis of the levels of formation of ethical competence of students at the initial and final stages of the research was proved by appropriate mathematical processing of the obtained data (Table 4) using Pearson's criterion χ^2 (differences between initial and final stages are statistically significant).

Table 4. The Results of Analysis of Levels of Ethical Competence Formation at the Initial and Final Stages of the Research

Source: Authors' own conception

Level of formation of ethical competence	Empirical frequency	Theoretical frequency	$(f_{\text{э}} - f_{\text{т}})$	$(f_{\text{э}} - f_{\text{т}})^2$	$(f_{\text{э}} - f_{\text{т}})^2 / f_{\text{т}}$
Very High	36	74.09	-38.09	1450.85	19.582
Very High	111	72.91	38.09	1450.85	19.899
High	94	93.25	0.75	0.56	0.006
High	91	91.75	-0.75	0.56	0.006
Medium	120	96.78	23.22	539.17	5.571
Medium	72	95.22	-23.22	539.17	5.662
Low	47	35.79	11.21	125.66	3.511
Low	24	35.21	-11.21	125.66	3.569
Threshold	15	12.1	2.9	8.41	0.695
Threshold	9	11.9	-2.9	8.41	0.707
Total	619	619	-	-	59.208

Result: $\chi^2_{\text{emp}} = 59.21$. The critical value of χ^2 at $v = 4$ at the level of significance $p = 0.05$ is 9.49, and at $p = 0.01$ - 13.28. These results indicate significant differences between the results at the initial and final stages of the study.

In order to verify the significance of the results obtained, there was additionally studied the same number (307 people) of graduate students of the other two medical universities (Bukovynian State Medical University and Lviv National Medical University named after Danylo Halytsky) who did not participate in experimental study. The results of the study on the formation of ethical competence in this sample (sample №2) and the participants of the experimental study at the final stage (sample №1) are presented in table 5.

Table 5. Distribution by Levels of Formation of Ethical Competence of Participants of Sample №1 and Sample №2

Source: Authors' own conception

Levels	Sample №1 (n=307)	Sample №2 (n=307)
Very high	111	71
High	91	69
Medium	72	110
Low	24	44
Threshold	9	13

The statistical significance of the changes revealed in the analysis of the levels of ethical competence of students in sample №1 and sample №2 was proved by appropriate mathematical processing of the obtained data (Table 6) using Pearson's criterion χ^2 (differences between the distribution of ethical competences in sample №1 and sample №2 are statistically significant).

Table 6. The Results of the Analysis of the Levels of Formation of Ethical Competence of the Participants of the Sample №1 and the Sample №2

Source: Authors' own conception

Level of formation of ethical competence	Empirical frequency	Theoretical frequency	$(f_{\text{Э}} - f_{\text{T}})$	$(f_{\text{Э}} - f_{\text{T}})^2$	$(f_{\text{Э}} - f_{\text{T}})^2 / f_{\text{T}}$
Very High	111	91	20	400	4.396
Very High	71	91	-20	400	4.396
High	91	80	11	121	1.513
High	69	80	-11	121	1.513
Medium	72	91	-19	361	3.967
Medium	110	91	19	361	3.967

Low	24	34	-10	100	2.941
Low	44	34	10	100	2.941
Threshold	9	11	-2	4	0.364
Threshold	13	11	2	4	0.364
Total	614	614	-	-	26.362

Result: $\chi^2_{\text{emp}} = 26.36$. The critical value of χ^2 at $v = 4$ at the level of significance $p = 0.05$ is 9.49, and at $p = 0.01$ - 13.28. These results indicate that there are significant differences between the results of the participants in the sample №1 and the sample №2.

Thus, the results of the study confirm that the effectiveness of the formation of ethical competence of future doctors can be significantly improved if at different stages of students' study in medical universities there would be gradually introduced pedagogical conditions aimed at enhancing the content, activity and result subsystems of the educational process.

5. Discussion

On the basis of the generalization of the obtained results we can conclude that after introduction of the pedagogical conditions of future doctors' ethical competence formation at the final stage of the research, the number of students with a threshold level decreased by 1.92%, if compared with the initial stage. This percentage is also lower compared to the number of students in the sample №2 (by 1.30%), where graduate students of the other two medical universities were studied.

At the final stage of the research, the number of students with a very high (up to 36.16%) level of ethical competence increased. At the initial stage, the share of students with a high level is 30.13%, and in the sample № 2 in the final year - 22.47%). Positive changes of students of medical universities who took part in the research, where pedagogical conditions were introduced, have also been noticed at other levels of ethical competence formation.

However, in the study we were also interested in the changes that took place in the value-motivational sphere of future doctor's personality, in particular the peculiarities of the value orientations of medical students and their professional motives.

To do this, at the final stage of the research, the level of the professional orientation of the medical graduates was determined using the "Test-questionnaire of the professional orientation level" by Dubovitskaia

(2004). It was found out that among students of the final year of study there were only 17.5% (compared to the students who took part in the initial stage of the research) more of those who fully shared the principles and norms of the professional ethics, who wanted to improve and work in accordance with the ethical requirements. That is, the difference between the indicators values of the students at the initial and final stages of the research was not very significant. Also using the methods "Motivation of Professional Activity" (Raigorodskii, 2002) motivational complexes of the students were defined and types of the prevailing motivation were established. It was found out that among the students who took part in the experimental study there were 3.75% more of those who had a very high level of motivation for professional activity with high ethical requirements. That is, they revealed in the motivational complex both external positive and internal positive motives, and the indicators of the external negative motives were lower. Simultaneously, among the students who took part in the experimental study there were 4.5% more of those who had a high level of motivation for professional activity, i.e. their motivational complex was dominated by the internal motives, the indicators of external positive and external negative motives were much lower than internal motives.

Another indicator, which is satisfaction with the chosen profession, was determined with the help of the methods by A. Rean (modification of the methods by V. Yadov, N. Kuzmina) (as cited by Raigorodskii, 2002). It was found out that among the students who took part in the experimental study there were 5.5% more people who were satisfied with the profession, ready to act in accordance with the standards of medical ethics, and would not agree to work without taking into account some ethical requirements.

On the basis of the analysis of results of the questionnaires we could conclude that a significant number of students chose the medical profession as their future professional activity due to their conscious interest in the biological sciences. Their number counted about 35.5%. The choice of future professional activity can be influenced also by the professional traditions in the family (family dynasties). It is this group of future medical professionals who are most deeply and comprehensively aware of all the responsibilities and difficulties associated with the chosen profession. The number of such students counted about 24.5%.

About 5.6% of the young people chose this profession because they or their loved ones had suffered a serious illness, and they decided to dedicate their lives to help the sick due to a call to it.

On the basis of the research generalization we can conclude that the high level of professional and ethical motives and professionally important

values is due to the high altruistic motivation of interaction and choice of profession, as well as the dominance of professionally important qualities of the future doctor. The relatively low level of motivation for ethical and conflict-free interaction is characterized by the predominance of pragmatic and financial motivation to choosing the profession. In addition, the value of the patient's personality is not recognized, and the doctor is motivated only by his own financial and social development.

The study results indicate that changes in the value-motivational sphere (formation of value orientations and professional motives) of the students who have chosen the medical profession are to some extent related to globalization, the influence of traditionalism and universalism, the predominance of pragmatic motives. These are the factors that determine the interest in obtaining material outcomes due to professional interaction, focusing on one's own profit.

6. Conclusions

The study has found that the ethical competence of a doctor is a holistic individual-psychological integrative multilevel phenomenon that is the result of continuing medical education. This competence includes theoretical knowledge of professional ethics, professional and ethical value orientations, moral and personal qualities and practical skills of a doctor in the professional activity. The formation of ethical competence provides doctor's conscious ethical behavior in accordance with professional and ethical standards, as well as the need for professional and ethical self-improvement throughout life.

The results of the research allowed us to establish the availability of reserves for improving the quality of future doctor's training and the formation of their ethical competence. Therefore, it is assumed that the formation of this competence will be effective if at different stages of students' training at medical universities there will be introduced the pedagogical conditions that enhance the functioning of the main subsystems of the educational process. These stages (including initial, cognitive-exploratory and determinative) are due to the peculiarities of students' professional and personal development at different years of study and their cognitive spheres.

The study conducted proved the effectiveness of the pedagogical conditions for the formation of future doctors' ethical competence at medical universities.

At the same time, the summarizing of the research results has allowed us to state about a certain influence of the tendencies of traditionalism, universalism and pragmatic motives on the value-motivational sphere of students who chose the profession of a doctor.

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