

# High level of legal awareness formation in medical students. Way from competencies to competence

## Alto nivel de formación jurídica en estudiantes de medicina. Camino de competencias para competir

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#### ABSTRACT:

In modern world many politicians, lawyers, scientists and representatives of civil society are concerned about the matter of elaborating the human rights and freedoms protection mechanisms, and therefore the matter of a high level of the legal awareness formation in medical students should be a priority. In 2010–2017, a study was conducted at the Department of History and Philosophy of the Rostov State Medical University, in which the sixth and the second year students of the Faculty of General and Preventive Medicine (FGPM) participated. The study was focused on obtaining information data, which proved the presence of the awareness characteristics (insights, dominants, values, etc.) and the effectiveness of a high level of the legal awareness formation in medical students. The leading method of studying the matter was an experiment conducted according to the nature of the experimental plan: 1) concomitant (a control group and an experimental group) and 2) sequential (experiment before and after studying the Bioethics discipline). In 2013, the comparative data on the legal awareness formation in university graduates (500 persons) was obtained during the ascertaining experiment that evidenced the lack of proper knowledge of ethical and legal norms of medical activity in the sixth year students. It indicated the necessity to include an axiological component in the teaching methods of academic disciplines in specialized and non-specialized departments of the university. In 2014–2015, during the formative experiment, the comparative data was obtained on the legal awareness and the dominant “for another person” formation in the second year students of the experimental (the EG–250 persons) and the control (the CG–251 persons) groups. Analysis of the obtained data indicated the necessity to create a unified ethical and legal space at the university expanding prospects of a high level of the legal awareness and need formation for a creative activity in students. The authors suggest that the algorithm of medical and ethical analysis of the situational tasks and experience of the need formation for a creative activity will be in demand in the scientific community, as they may be applied in elaborating the effective methods of the young people professional orientation.

**Keywords:** bioethics, competencies of medical professionals, competence, legal awareness of future medical professionals, situational tasks.

#### RESUMEN:

En el mundo moderno, muchos políticos, abogados, científicos y representantes de la sociedad civil están preocupados por la elaboración de los mecanismos de protección de los derechos humanos y las libertades, y por lo tanto, la cuestión de un alto nivel de formación de conciencia legal en estudiantes de medicina debe ser una prioridad. En el período 2010-2017, se realizó un estudio en el Departamento de Historia y Filosofía de la Universidad Médica Estatal de Rostov, en el que participaron estudiantes de sexto y segundo año de la Facultad de Medicina General y Preventiva (FGPM). El estudio se centró en obtener datos de información, que demostraron la presencia de las características de conciencia (información, dominantes, valores, etc.) y la efectividad de un alto nivel de formación de conciencia legal en estudiantes de medicina. El método principal para estudiar la materia fue un experimento realizado de acuerdo con la naturaleza del plan experimental: 1) concomitante (un grupo de control y un grupo experimental) y 2) secuencial (experimento antes y después de estudiar la disciplina de Bioética). En 2013, los datos comparativos sobre la formación de conciencia legal en graduados universitarios (500 personas) se obtuvieron durante el experimento de verificación que evidenció la falta de un conocimiento adecuado de las normas éticas y legales de la actividad médica en estudiantes de sexto año. Indicó la necesidad de incluir un componente axiológico en los métodos de enseñanza de las disciplinas académicas en departamentos especializados y no especializados de la universidad. En 2014-2015, durante el experimento formativo, los datos comparativos se obtuvieron sobre la concienciación legal y la formación dominante de “para otra persona” en los estudiantes de segundo año del experimental (las personas de EG – 250) y el control (CG– 251 personas) grupos. El análisis de los datos obtenidos indicó la necesidad de crear un espacio ético y legal unificado en la universidad, ampliando las perspectivas de un alto nivel de conciencia legal y la formación de necesidades para una actividad creativa en los estudiantes. Los autores sugieren que el algoritmo de análisis médico y ético de las tareas situacionales y la experiencia de la formación de la necesidad de una actividad creativa será una demanda en la comunidad científica, ya que pueden aplicarse en la elaboración de métodos efectivos de orientación profesional de los jóvenes.

**Palabras clave:** bioética, competencias de los profesionales médicos, competencia, conocimiento legal de futuros profesionales médicos, tareas situacionales.

## 1. Introduction

Recently, the number of complaints from Russians to the higher authorities on the quality of medical care services has increased, there has been an increase in the number of legal procedures on “medical cases”, and unsightly incidents in medical institutions of the country receive public response through the mass media. At the meeting of the interdepartmental working group on investigating crimes related to medical errors, the statistical data was announced: in 2016, the investigative authorities of the Investigative Committee of Russia received 4947 reports of crimes associated with the medical errors and inadequate medical care, in 2017–6050, or by 22.3 % more. According to the results of these reports consideration, in 2016 the investigative authorities of the Investigation Committee opened 878 criminal cases, and in 2017–1791. A.I. Bastrykin noted that full, comprehensive and objective investigation of these cases is one of the priorities of the Investigation Committee (Petrenko, 2018).

L.M. Roshal is taking a lot of measures to improve the law knowledge of the medical professionals. In the National Medical Chamber of the Russian Federation the legal education of the medical professionals is performed mainly in the context of consultations, during which the physician is given an explanation on how to behave during the pre-investigation check. At the same time, there is no official statistics on iatrogenic crimes in the Russian Federation, as well as there is no data on the mortality of patients due to the fault of medical professionals.

According to the Health Day data, every nine minutes a patient dies in a US hospital because the diagnosis was made incorrectly or out of time. It resulted in 80 000 deaths per year. This sobering statistics is aimed at consolidation of society to resolve the current

matters in the US health care system and increase in the level of diagnostic measures in medicine (Dozens of medical groups join forces to improve diagnoses, 2018).

The matters of bioethics are in the field vision of the international community, which requires authorities of different countries to pay an appropriate attention to the human rights compliance and to continuously monitoring the quality of medical education and medical care. Taking into account growing interest of the scientific community to the elaboration of effective measures to protect human rights and health, the matters of a high level of legal awareness formation in medical students remain uninvestigated. Russian and foreign authors in their studies raise matters related to the formation of selected skills (clinical thinking), while the competence of a medical professional suggests that he/she has a high level of legal awareness (moral imperatives of the medical practice).

Special features of teaching in the medical university by default "distribute" competencies to professional (PC), general professional competencies (GPC) and general cultural competencies (GCC). GCC in most cases "correspond" to social and human sciences, and PC correspond to medical and biological sciences. The exception is Bioethics, since it is a propedeutic course to all theoretical and clinical disciplines studied at the medical university. The process of studying the discipline is aimed at the following competencies formation in accordance with the Russian Federal State Educational Standard of Higher Education (FSES HE) in the qualification 31.05.01 "General Medicine":

GPC-4–ability and willingness to implement ethical and deontological principles in professional activity,

GPC-5–ability and willingness to analyze the results of their own activity to prevent professional errors.

It is necessary to note that the principle of humane treatment to the patient is implemented in practice by the medical professionals with a high level of legal awareness, who have a dominant "for another person", and ethical and legal norms that exist in society are most often violated by the specialists with a low level of legal awareness and a dominant "for myself". Thus, teachers working at the medical university are faced with the task of the medical mentality formation: valuable determinants of personality and dominants of a healthy way of life in students.

The legal basis for counteraction to offences in the field of health care is firstly the legal awareness of the medical community members, and secondarily laws and regulations. The legal law in its main idea is the formula of an advanced legal awareness, formed due to adoption of the social norms by the individual as his/her personal law (law of the individual=law of the society).

Objective of this study is to substantiate the effectiveness of the method application of compiling and solving situational tasks in bioethics in the context of a high level of legal awareness formation in medical students during the entire period of study. This objective is implemented in mastering the skills of ethical and legal measurement of medical activity by simulating and analyzing theoretically possible situations and preventing professional errors.

During this study, we used the following key concepts (Ageeva, 2018):

*Bioethics* is an interdisciplinary system of scientific and extra-scientific knowledge about the primacy of human values in the preservation of life on Earth, the laws and properties of human interaction with the environment, manifested in axiological dimension of his/her attitude to him-/herself, other people, nature, society and the world as a whole.

*Competencies* are markers of the Federal State Educational Standard of the Higher Education, the formation of which, in their totality, makes it possible to evaluate: 1) the level of professional training of the specialist, 2) the quality of educational services provided by the university.

*Competence* is willingness and ability of the specialist: 1) to put into practice the knowledge gained during training and self-education, 2) to make decisions in accordance with the traditions and requirements developed by the professional community and meet the contemporary needs of society.

*Pedagogical technology* is a set of organizational and methodological tools that determine the modeling of pedagogical process and designing the desired result in accordance with the necessary principles and real conditions.

*Legal awareness* is a state of soul, inherent to a greater or lesser degree to each person, manifested in his/her actions, in its essence and result corresponding to what the law requires through the person's awareness of the necessity to respect his/her personal rights by other people and respect the rights of others.

*Situational task* is a universal method of obtaining and reproducing knowledge and skills, which are necessary for making decisions based on the rational motives.

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## 2. Literature review

At the end of the twentieth century, in connection with the change in the social system, significant transformations of the valuable determinants of the personality of Russians occurred. Describing the conditions of the significant changes of a child and the situation of his/her development, D.I. Feldstein notes a change in the mentality and dominants of the personality in modern children as a result of alien sociocultural patterns of the behavior adoption. All this against the background of the lack of expressed interests, absent-mindedness, hyperactivity and inability to concentrate on certain activity (Feldstein, 2010). These changes present certain difficulties in teaching and require a teacher with the highest degree of professionalism and a person-centered approach to the students.

Today, the task of minimizing the time expenditure on mastering the new pedagogical technologies is under consideration. According to V.V. Utyomov and P.M. Gorev, any technology in its development goes through several stages: 1) uniqueness, 2) standard, 3) packaged solution. The researchers explain: "The first stage "Uniqueness" is associated with the appearance of an educational solution idea. Someone developed the solution and received the desired one-time result. The solution is already elaborated, but only few persons are familiar with it. <...> If a sufficient number of teachers begin to use the educational solution in work, the solution goes into the "Standard" stage. <...> As soon as a developer manages to present and to describe his/her solution in such a way that every interested teacher without the developer's participation can implement it and achieve a given quality, the solution has reached the packaged solution stage" (Utyomov & Gorev, 2018).

Consequently, the authors' description of the technology of packaged educational solutions allows in any institution of the education system to systematize the work of a staged transition from the development of customized solutions to the packaged educational solutions that reduce the time spent by the teachers on the organization of classes in educational activity of children and young people.

In modern world, interdisciplinary studies on the readiness of future teachers, physicians and rescuers to ensure social security are in demand. P.A. Kislyakov substantiates theoretical and practical bases of applying the method of solving situational tasks in the process of preparing students of pedagogical university. The author believes that active forms of education are aimed at designing behavior both in normal conditions of daily life activity and in conditions of an emergency, crisis situation (Kislyakov, 2012). This experience may be used in work of the pedagogical and medical universities, as well as in the training of personnel for the emergency system services.

O.V. Pizar highlights the following methodological features of the method for solving situational tasks (Pizar, 2009):

- 1) It is a specific type of research analytical technology, which includes operations of the research process and analytical procedures.
- 2) It acts as a method of collective learning, the most important components of which are work in the group and subgroups, mutual exchange of information.

- 3) It is a synergistic activity, which consists in immersing a group in a situation and shaping the effects of multiplying knowledge.
- 4) It represents a type of project activity, in which the task and ways to solve it are forming.
- 5) It contributes to the activation of students' cognitive activity, stimulating their success.
- 6) It represents the process of an information field formation, organization of information communications, confrontation of positions.
- 7) It contributes to the development of the reflexive abilities in students through the analysis and self-analysis of social security activity.
- 8) It contributes to adaptation of the students to all kinds of stress factors.

D.Sh. Matkarimova believes that the use of situational tasks allows to optimize the learning process, improve the mastery of a significant amount of information for a limited period of time, develop the clinical thinking skills and the ability to make responsible decisions, improve the self-esteem of students (Matkarimova, 2012).

Situational tasks as a way of developing the clinical thinking in students of the medical university are considered by the following authors: V.V. Zaievina, V.V. Skibitsky, N.I. Oleinik, Yu.G. Zvyagintsev, L.S. Pashchenko, N.V. Porodenko (Zaievina et al., 2014). Clinical thinking is understood as a specific mental activity of a practicing physician, ensuring the effective use of evidence-based medicine and personal experience for solving diagnostic and therapeutic issues regarding a particular patient. Clinical thinking has two components: 1) specific, reflecting medical knowledge, skills and abilities, 2) non-specific, logical, carrying the laws of productive thinking.

It was pointed out that in the form of a business game, students quickly learn the educational material about the role of arterial hypertension in the development of cognitive impairment. In the context of studying the issues of early diagnosis, the possibility of an integrated approach to the treatment of cognitive disorders in patients with arterial hypertension and taking into account the pathophysiological mechanisms of interaction of the depression symptoms and the cardiovascular disease (Ivanchenko et al., 2016) is discussed. The situational tasks in oncology may help medical students and ordinators to sort out the cases of patients visiting the clinic with common and recurrent forms of neoplasms (Nepomnyaschaya et al., 2013). This is relevant because cancer and cardiovascular diseases are socially significant diseases in the world. Obviously, the introduction of problem-based education elements into the pedagogical process of the medical university is necessary not only during the semester, but also at the examination stage, which improves the quality of education, the level of specialist training and its adaptation to professional activity.

In the context of innovative development of the Russian health care system and the introduction of biomedical technologies into the clinical practice, it is not allowable to give preference only to professional competencies (PC), ignoring general professional competencies (GPC), which include the knowledge from the Bioethics discipline. Researchers N.A. Ageeva and G.N. Shapoval believe that the method of compiling and solving the situational tasks on bioethics contributes to the formation of students' ethical and legal skills in measuring the scope of medical activity (Ageeva & Shapoval, 2017).

In the articles of foreign authors, the educational (packaged) solutions are considered as means of personalized learning. In his study, B. Bloom described a phenomenon known as two-sigma (two curves for the normal distribution of the student results), which is that an ordinary student who is trained personally using an individual program shows results 98 % higher than the control group taught by standard methods (Bloom, 1984).

Personalization of training may be manifested in attributes of educational process: objectives and tasks of training, methods and approaches, educational content and its sequence, pace of presentation and visualization. Attributes may be described for use by the interested person as an educational (packaged) solution (Reimagining the Role of Technology in Education, 2017). According to M. Molnar, the educational solutions, due to the methodically elaborated algorithm for learning the educational material, provide less successful students with access to more complex activities (Molnar, 2015).

Use of the methodical complex with a well-developed algorithm of educational solutions allows teachers and students to minimize the time expenditure on preparing for a lesson, orients students to make a meaningful choice in relation to their profession and forms the basis for continuous training and self-education (Bandura, 2001). B. Spitzer and J. Aronson emphasize the importance of educational solutions as an effective form of help for students, because the training success is favorable for the development of their personality, promotes inner motivation and provides academic involvement, which is an important factor in reducing inequalities in the educational class (Spitzer & Aronson, 2015).

Foreign authors, reflecting on the matters of professional training for the health care system, actualize the issues of teaching Bioethics, considering it as a propedeutic course to all academic disciplines of the medical university. A number of published works raise issues of the legitimacy of ethics committees (Shelton & White, 2015), freedom of the research and university policy (Genetic Discrimination, 2017), ethics of the professional community (Dodek et al., 2016), and the public health care (Campbell et al., 2016).

Neha Vapiwala and her colleagues in the magazine "Medical Education" urges the medical community to solve the psychological problems underlying the making professional mistakes and appearing after disclosure of these mistakes. The authors believe that the ability to promptly and effectively disclose the errors needs to be formed in physicians as an ability that may lead to an improved patient satisfaction, personnel well-being and improved hospital results. To implement further productive behavioral changes the targeted practice is required, supported by the social psychology lessons, which may be used to interact with standardized patients (SP) to simulate meetings in hospitals. Virtual reality (VR) may be embedded in the pedagogical process as an exciting, realistic and easily expanding technology in addition to the traditional curriculum.

New initiatives of the administrative punishment of physician for the offense helped to achieve moderate success in creating a culture of transparency in the US health care system, but these efforts are mainly focused on the legal and financial aspects of error disclosure and do not affect other barriers such as fear, shame and guilt which come with error information. The authors emphasize the importance of establishing professional competence by including situational tasks, without limitation of disclosing a medical error in medical licensing exams for assessing the clinical skills of interns (Han et al., 2017).

It is necessary to point out that special attention is paid to the development of logical component of the clinical thinking in the Department of Medical Education and Personnel Policy on the website of the Ministry of Health of the Russian Federation (Situational Tasks, 2018), they offer to get acquainted with the situational tasks that are used to perform the third phase of the primary accreditation for qualifications "General Medicine", "Pediatrics", "Medical and Prophylactic Care", "Dentistry", "Pharmacy", "Medical Biophysics", "Medical Biochemistry" and "Medical Cybernetics". Unfortunately, there is no one task or question to the task concerning the testing of knowledge for university graduates on ethical and legal aspects of the medical practice.

An effective program for the bioethics and humanities learning in medical faculties was developed in the United States. It provides an overview of key issues for study and strategies for this program adaptation to existing ones. The proposed recommendations take into account that the hours for bioethics and humanities range from 4 to 200. The program states that special instructions on the communication skills should be developed at medical faculties, since these skills are included in the duties of the therapist and include communication with patient, his relatives, colleagues and other health care professionals (bad news report, ability to keep medical confidentiality, refusal of treatment, euthanasia). The purpose of this development is to support: 1) colleagues in the field of ethics and humanities in teaching, 2) medical educational institutions to meet all the requirements, 3) to help students in preparation for clinical practice. Authors of the program note that students have a low level of such basic skills as the ability for well argued reasoning and evaluative judgment, therefore, more attention should be paid to the development of these skills. To implement the tasks, a new ethics curriculum was developed for the second year students of medical faculties with duration of 12 hours (ASBH Task Force on Ethics and

Humanities Education in Undergraduate Medical Programs, 2009).

In Canada (Code of Ethics for Registered Nurses, 2017) and in the United States of America (Delany & Molloy, 2018), there is a strong focus on ethical counseling and development of special training programs and courses in bioethics. The authors of the methodological guidelines from North America point out the problem of specially trained personnel deficit for work in the United States Ethical Counseling Centers (Improving Competence in Clinical Ethics Consultation: A Learner's Guide, 2006). When creating the methodological guidelines, the authors took into account that all people perceive information in different way, and they tried to apply strategies that are important for counseling in various conditions: in city and in village, in local hospitals and training centers. However, the authors emphasize the necessity to adapt to the peculiarities of the legislation of different states.

Methodological guidelines in the United States, as a rule, include the whole range of bioethical issues, with practical tasks for students at the end of each section (ethical and legal issues, a proposal to read thematic articles and books, watch films, discuss advantages and disadvantages of legal and ethical standards in a specific sphere of medical activity). Courses on bioethics in the USA may be modeled for home use (computerized), but they do not involve learning without any coaching (Improving Competence in Clinical Ethics Consultation: A Learner's Guide, 2006).

In studies on bioethics, many American physicians describe specific cases of applying the principles of bioethics in clinical practice and share work experience with colleagues (Spike, 2015). The USA methodological textbooks also deal with real cases in medical practice. K. Delaney and E. Molloy wrote a practical guideline, including theoretical aspects of clinical education and practical learning strategies in three areas: theory, method and context. The authors consider professional activity of a physician as a non-stop educational process that promotes transfer of the student from the audience to the workplace and the change of status from student to clinician (Delany & Molloy, 2018).

Russian and foreign scientists studying the development of professional culture of a physician consider the effectiveness of active teaching methods, in particular the use of situational tasks, in the context of forming logical component of clinical thinking, not paying appropriate attention to ethical and legal aspects of medical practice.

With all the advantages of American experience in teaching the Bioethics discipline, there is a disadvantage - absence of development on modeling possible situations of ethical and legal content based on the algorithm and regulatory documents (international law). At proper time, Aristotle in the Nicomachean ethics noted that virtue is a certain "established predisposition of character" that a person acquires "in practice of morally good actions". True virtue cannot be formed only through philosophical study of ethics, unless a person has previously acquired practical experience of virtue, has not exercised the activity of his soul according to virtue. Students and medical professionals from different countries of the world should learn to coordinate their actions not only with the norms of domestic laws, but also with the norms of international legislation. To do this, it's not enough to learn the law being a student; a person need to be able to apply legislative norms to a real situation through regular exercises - in the process of solving situational tasks of ethical and legal content.

The experience of teaching bioethics at the Department of History and Philosophy of the Rostov State Medical University updates the words of Aristotle and indicates the necessity for students to exercise moral action through: 1) the algorithm for compiling and solving situational tasks based on regulatory documents and 2) the project activity for the prevention of non-communicable diseases.

Specialists of the World Health Organization note that one of the main causes of non-communicable diseases (237 million men and 46 million women) and mortality (3 million persons per year) throughout the world is excessive alcohol consumption. The WHO report draws attention to the necessity to take emergency measures to prevent alcoholism by the medical community (Alcohol responsible for one in 20 deaths worldwide: WHO, 2018). This updates the problem of search by the pedagogical community of new effective forms and means of medical students socialization in the context of their project activity aimed at shaping the dominants of healthy way of life and preventing alcoholism among the population.

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### 3. Materials and methods

The study was conducted at the Department of History and Philosophy of the Rostov State Medical University (RostSMU). Initially, it was focused on obtaining data indicating the level of legal awareness in university graduates. After transferring the study of the Bioethics discipline from the sixth year to the second, the focus shifted to testing specially created pedagogical conditions aimed at the effective mastering and implementing of ethical and legal norms developed by the medical community. It was conducted by the second year students of the Faculty of General and Preventive Medicine (FGPM). To check the significance of differences in the group, the method of splitting data into groups (subsamples) was used. Separate and comparative analysis was performed. It manifested in the presence/absence of the characteristics of awareness required by future medical imperatives of professional activity.

The leading method of studying the matter of legal awareness formation in medical students was an experiment conducted according to the nature of the experimental plan: concomitant and sequential. When analyzing the data obtained, a manual method of processing and systematizing information was used, and the comparison method was applied.

At the stage of the ascertaining experiment, 500 students from the sixth course of the FGPM took part in the study. The formative experiment was conducted with the second year students of the FGPM including 501 persons, which lasted 2.5 years.

Stages of the study: 1) search (2010–2012), 2) diagnostics (2013–2014), 3) experiment (2014–2016), 4) analytics (2017).

The first stage is the search, during which the analysis of research and teaching literature on this topic was completed; the conceptual definitions were clarified; and the definition of legal awareness, the criteria and levels of its formation (high, medium, low) were developed.

The second stage is the diagnostics, which includes an ascertaining experiment with the sixth year students studying at the Rostov State Medical University with the qualification "General Medicine", during which situations of ethical and legal content, theoretically possible in medical activities, were modeled. In 2013, at the Department of History and Philosophy with students of the final year of the FGPM, tests were conducted before and after studying the Bioethics discipline. Based on the results of the ascertaining experiment, a formative experiment was developed for the second year students enrolled in the qualification "General Medicine". However, it was decided to make changes to the curriculum of the university, transferring the study of the Bioethics discipline from the sixth year to the second.

The third stage is the experiment, during which the developed algorithm for the correct decision making was tested in the context of the legal awareness formation in students while studying the Bioethics discipline (author: Ageeva N.A.), which corresponds to ethical and legal norms of the medical community, traditions of high society and religious humanism.

In 2014, the Department of History and Philosophy of the Rostov State Medical University with the second year students of the FGPM performed work on the legal awareness formation in the framework of seminars in bioethics. The formative experiment was focused on identifying the effectiveness of the developed teaching and methodological complex of the Bioethics discipline, which includes project activity of students "A Model of Forming the Experience of Health Saving Activity of a Future Medical Professional". The experimental group (EG) of the second year students of the FGPM included 250 students, and the control group (CG)–251 students. The students of the experimental group additionally attended the elective course "World Religions" in the amount of 36 hours, which contributed to the orientation of the individual towards dominants, modes and attitudes associated with the phenomenon of religiosity in the modern world. The data of the formative experiment is presented in Table 2 and in Table 3. At the same time, the entire complex of pedagogical conditions created at the Department of History and Philosophy of the Rostov State Medical University was tested, the

methods of teaching the Bioethics discipline were being finalized.

The fourth stage is the analytics, in the framework of which a system analysis was completed with generalization of the results and discussion on the possibility of introducing the obtained experience into the practice of classroom and extracurricular activity of specialized and non-specialized departments of medical university.

Gradation of levels of legal awareness formation in students for "high", "medium" and "low" corresponded to the points of the correct decision making algorithm, during which students' knowledge was tested in relation to a situational task: 1) international law, 2) Russian medical legislation, 3) requirements imposed on services of this kind (medical custom). The correspondence of a student's knowledge to all three points indicates a high level of legal awareness, a two-point argumentation evidences the medium level of legal awareness, and a solution of situational task based only on medical custom indicates a low level of legal awareness in students.

Gradation of levels of the dominant "for another person" formation (necessity for creative activity) in students for "high", "medium" and "low" corresponded to the points of three tasks, during which students' knowledge and readiness for productive activity were tested. The high level of the dominant "for another person" formation corresponded to students who completed all three tasks, the average level—two tasks and the low level—one task for a report/presentation compilation. Before the experiment with the students of both groups, a survey was conducted about their participation in volunteer initiatives and public speaking, the ability to make a report and a presentation.

The results of ascertaining experiment with the sixth year students (500 persons) of the FGPM are presented in Table 1. The results of the formative experiment with the second year students (501 persons) of the FGPM are presented in Table 2. The results of the project activity of the second year students (501 persons) of the FGPM are presented in Table 3.

## 4. Results

It was assumed that the sixth year students after curations at the specialized departments already have sufficient knowledge relating to ethical and legal norms of medical practice. But it was not true. The data of the ascertaining experiment is presented in Table 1.

**Table 1**  
Comparative data on the legal awareness formation in graduates of the Rostov State Medical University before and after studying the Bioethics discipline

Group	Number of students	Levels					
		High		Medium		Low	
		Before experiment	After experiment	Before experiment	After experiment	Before experiment	After experiment
The sixth year students	500	2 %	16 %	18 %	33 %	80 %	51 %

Modeling situations of ethical and legal content during seminars on bioethics led to a better orientation of students in the regulatory framework of Russian legislation. At the same time, students (51 %) showed a low level of legal awareness after studying the Bioethics discipline, because their theoretical and practical knowledge were not the same. When solving situational tasks, students acted on the side of the "violating physician", tried to find an excuse for the unsightly actions of a medical professional, without taking into account the requirements of the law. This indicates that during six years of study at the medical university, students did not create a healthy form of legal awareness, according to which future specialist correctly understands the principles of fairness, truthfulness, voluntariness and confidentiality, showing solidarity with the medical community, based solely on ethical and legal norms developed by the same community. All this points indicated the necessity to change the curriculum by including the Bioethics discipline in the schedule of the second year students and the implementation of the principle of continuity between specialized and non-specialized departments on the legal awareness formation in medical students in classroom and in extracurricular time.

Analysis of the obtained data made it possible to conclude that it is necessary to search for more effective methods of high level of legal awareness formation in medical students by simulating and analyzing theoretically possible situations and preventing professional errors in medical practice.

**Table 2**  
Comparative data on the legal awareness formation in the second year students of the experimental and control groups before and after the experiment

Group	Number of students	Levels					
		High		Medium		Low	
		Before experiment	After experiment	Before experiment	After experiment	Before experiment	After experiment
EG	250	1 %	25 %	14 %	46 %	85 %	29 %
CG	251	3 %	12.7 %	10.8 %	36.3 %	88.3 %	53 %

Comparison of average values of indicators of changes in the level of students' legal awareness formation in the experimental and control groups allows us to conclude that positive results of interaction depend on creating the necessary conditions for successful socialization of students.

The training stage of the formative experiment was centered on cognitive activity based on the principles of bioethics, and forming and integrating stages were marked by the predominance of students' self-control and mutual control over the external control of the teacher who was dominant at the training stage.

The correct decision making algorithm is a method for analyzing information presented in a situational task for compliance with: 1) international law, 2) Russian medical legislation, 3) requirements for this kind of services (medical custom).

An example of a situational task: A primary school pupil was going home from school and, crossing the road, got under the wheels of a car. The ambulance doctors who arrived at the accident site provided emergency medical care for the child to eliminate the threat for

life without parental consent and took him to the hospital where he was urgently underwent surgery. After a set of activities to save the life of a minor, all information about medical interventions was communicated to the parents. However, a month later, the minor required the following surgery and blood transfusion, with which the parents were totally disagree due to religious convictions.

Question: What are further actions of the medical organization in case of a written refusal of parents for providing the necessary medical care to a minor?

The standard response according to the algorithm:

**1. Compliance with international law. The Convention on the Rights of Child, adopted by the United Nations in 1959, states.**

The participating States recognize that every child has the inherent right for life (article 6 part 2);

States parties shall ensure that a child is not separated from his parents against their wishes, unless the competent authorities, in accordance with a court decision, determine, in accordance with applicable law and procedures, that such separation is necessary in the best interests of the child (Article 9, Part 1).

**2. Compliance with the Russian legislation in the field of medicine**

When providing the emergency medical care to a minor to eliminate the threat for life without the consent of parents (legal representatives), in accordance with Article 20 (Part 9, Clause 1) of the Federal Law dated 21.11.2011 No. 323-FL "On Principles of Citizens Health Protection in the Russian Federation" the medical professional informs his/her parents (legal representatives) about the medical care provided. In accordance with Article 20 (Part 5), in case of a written refusal of parents to continue to provide the necessary medical care to a minor, the medical organization has the right to appeal to the court.

**3. Compliance with the requirements of the services of this kind (medical custom). Protection of childhood and motherhood is in the priority of any state**

Examples of the situational tasks with standard responses are given in the study of Russian authors (Ageeva & Shapoval, 2017).

The project activity of the second year students of the FGPM was aimed at the dominant "for another person" formation (the need for creative activity) and consisted of three tasks: 1) participation in volunteer initiatives, 2) participation in educational and preventive activity, 3) reports/presentations compilation.

Students of the experimental (EG) and the control (CG) groups were asked to prepare reports/presentations, including volunteer activity and preventive measures against alcoholism. 100 % of the CG students made reports and presentations, but flatly refused to take part in preventive work with the population (pupils of schools, students, etc.). After the experiment, only 5 % of the CG students delivered a lecture for students of the Rostov State Medical University with presentations about the dangers of alcohol on the human body. The EG students showed themselves much better: 100 % of students prepared reports and presentations, of which 32 % took part in preventive work with the population (lectures for applicants and students of the RostSMU), 10 % were involved in the city charity project "Santa Claus Team" (they presented the New Year gifts to children with disabilities during the New Year holidays from December 25, 2015 to January 11, 2016) and 74 % were active in the All-Russian Volunteer Campaign "Spring Week of Good" (spread newsletters in urban public transport from April 18 to April 24, 2016). Voluntary initiatives of the students were marked by the letter of gratitude and letters from the Rostov Union of Children and Youth Organizations. Analysis of the data indicates the necessity to form a need for the creative activity in medical students.

**Table 3**  
Comparative data on the dominant "for another person" formation in the second year students of the experimental and the control groups before and after the experiment

Group	Number of students	Levels					
		High		Medium		Low	
		Before experiment	After experiment	Before experiment	After experiment	Before experiment	After experiment
EG	250	2 %	84 %	8 %	32 %	100 %	100 %
CG	251	0 %	0 %	0 %	5 %	100 %	100 %

All students successfully managed with the development of a program for the prevention of non-communicable diseases acquired by people due to alcohol consumption. Reports and presentations prepared by students may be further used in the educational and training process of the Rostov State Medical University on the formation of dominants of healthy way of life in young people. Products of research and scientific activity of students may be placed in the Internet: in medical communities, on personal pages of students and teachers. Within the framework of interdepartmental cooperation, the accumulated material may be in demand by the physicians, students of pedagogical universities, teachers, school pupils and their parents, students of medical classes and colleges.

During the study, the list of general professional competencies (for a high level of legal awareness formation) was compiled, according to which a graduate of the medical university should possess:

-ability and willingness to apply in professional activity knowledge of regulatory documents (federal laws, ethical codes, standards, protocols, procedures, clinical guidelines, etc.), to make decisions in accordance with ethical principles (fairness, truthfulness, voluntariness, confidentiality, etc.)

-ability and willingness to perform a medical and legal analysis of the situation, to coordinate decision making with psychophysical, gender, cultural and religious features of the patient to prevent professional mistakes;

-ability and willingness to self-control, mutual control and discipline, to take and bear responsibility for his/her actions (moral, disciplinary, administrative, civil and criminal).

After introducing into the pedagogical process the situational tasks on the knowledge of ethical and regulatory documents (international law, Russian legislation, medical custom), students were formed competencies of the professional activity medical and legal analysis with access to the practical result-skills of preventive work to protect the public health. It has a practical significance for the pedagogical and medical communities as a whole, since the application of the correct decision algorithm will help to improve the quality of personnel training for health care systems in different countries, which will contribute to the harmonization of national laws with existing international legislation.

**5. Discussion**

During the study on legal awareness formation in medical students, a positive dynamics was noted. The results of the ascertaining

experiment showed the development of professional competencies in the sixth year students. However, during a short period of time (36 hours) within the framework of Bioethics classes, it was difficult for students to develop general professional competencies, manifested in the ability and willingness to: 1) implement ethical and deontological principles in professional activity, 2) analyze the results of their own activity to prevent professional errors. These competencies should be formed throughout the entire period of study at the university (six years). In the Program of the State Final Attestation in the qualification 31.05.01 "General Medicine" in the section "General Medical Issues" there is a point—Medical Ethics, but there are no testing and assessment materials to check the level of legal awareness in university graduates.

During curations at specialized departments, students of from the fourth to the sixth years of the FGPM study academic disciplines (faculty therapy, polyclinic therapy, hospital therapy, oncology, radiation therapy, etc.), learn to make case records, conduct patient visits, make clinical rounds, carry out clinical discussions, prepare reports on the most interesting clinical cases. It is important for further professional activity. At the same time, only a medical professional with a high level of legal awareness is capable of self-control and accurate execution of job description, which seems significant in the process of optimizing internal quality control of medical care providing. Internal quality control in a health care institution is ineffective without the ability to self-control by each employee in the team. It confirms the necessity for purposeful work on the high level of legal awareness formation in medical students throughout the entire period of study with coverage of pedagogical process in all departments (specialized and non-specialized).

Russian students participated in this experiment. However, foreign students were not left without attention. For example, the monitoring of consumer satisfaction among Indian students performed in 2011 made it possible to develop an action plan to create the necessary conditions for successful socialization and inculturation of students from different countries (Abramova et al., 2018). It led to an increase in the level of interethnic harmony, heartedness and tolerance in the student environment, the development of communication skills when interacting with people of different cultures and religions.

Practical significance of the results:

During the study, the concept and essential characteristics of legal awareness were clarified, which will later serve as a guideline for expanding the framework of categories and concepts on the stated topic at theoretical and methodological levels, in the individual (physician) and group (medical community) contexts.

During the study of the Bioethics discipline, an algorithm for making correct decision was developed and introduced, which had a positive impact on the process of mastering the skills of ethical and legal measurement of medical activity through modeling and analyzing theoretically possible situations and preventing professional errors.

The effectiveness of the educational and methodical complex of the Bioethics discipline was confirmed and the necessary pedagogical conditions for achieving greater productivity in work on the professional orientation of medical students were determined.

The leading role of continuity in the process of legal awareness formation in students was substantiated in the study of academic disciplines throughout the entire period of study at a medical university, at specialized and non-specialized departments.

The necessity of high level of legal awareness formation in future medical professionals has been proved and the priority of self-control of the individual in the context of optimizing internal quality control of medical care providing has been justified.

The algorithm of work on the medical and legal analysis of medical activity, displayed in situational tasks, will contribute to graduates of universities in the world to come a way from competencies (accumulation of knowledge, experience and skills) to competence (its reproduction), avoiding professional mistakes, coordinating their decisions with the norms of domestic and international legislation.

Teaching and methodical complex of the Bioethics discipline proved its productivity due to the project activity of students: "A model of forming the experience of future health care activity of a medical professional", which is very relevant for the medical community in the context of the recent call for fighting alcoholism, announced in the report of the World Health Organization.

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## 6. Conclusion

In the framework of the performed study, certain limitations of the analysis were identified, since for the greatest accuracy of the formative experiment, it was necessary to perform control sections of students knowledge in specialized departments during their study in the third and the fourth years. The teacher in the group is the main repeater of the rules and norms of the behavior, therefore first of all the teacher should be an example for young people in everything. The level of professional training of a teacher also has a great importance, his knowledge of ethical codes and federal laws, medical standards and norms of international legislation. Thus, before introducing the work experience outlined in this study, for the purity of the experiment in the group, it is necessary to send teachers from the specialized and non-specialized departments of the university to a short-term upgrade training course on the topic: "High level of legal awareness formation in medical students". In future, it is possible to develop a module for training applicants entering a medical university in order to check their level of legal awareness (before and after a training course, before and after entering a university) and, if necessary, developing a plan of corrective measures with students.

It is interesting to further study psychological problems underlying making professional mistakes and appearing after disclosure of mistakes (Han et al., 2017). It would be possible to shift the vector of researchers' thought to the importance of establishing a professional level of competence by including the situational tasks to check self-control, discipline and responsibility on preventing a medical error in the medical licensing exams to assess the students' ethical, legal and clinical skills.

There are premises for achieving a high level of legal awareness in medical students, but bioethical knowledge will be reproduced and will become a need only if ethical and legal norms are regularly applied throughout the entire period of study in educational space of the university. In isolation, ethical codes and federal laws are external setting of the community and only the internal need of an individual to comply with ethical and legal norms and reproduction of social relations system will be able to include the processes of self-analysis, self-control and self-improvement of the students' personalities. This is the only one way to cultivate a spiritual and moral personality with an active civil position, who is ready to work for the good of society, who is able to work in team, who respects the rights and freedoms of another person.

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