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BIOETHICAL CONTENT OF CURRENT STUDIES ON PROFESSIOGENESIS PROBLEMS IN MEDICINE

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Contemporary studies of the professionalization phenomenon in medicine focus on socio-psychological determinants of professional growth in dynamics of personal socialization. Since personalized and stratified medicine has become a part of medical sciences, whereas biotechnologies in treatment of socially important diseases have started developing within the interdisciplinary area of medicine, biology (genetics) and chemistry, international ethical conflicts are inevitable. Hence modern research trend of professionalization in medicine is its bioethical content. The analysis of contemporary studies carried out within the interdisciplinary area of sociology of medicine allowed us to conclude that on the whole Russian methodology in the studies is based on classical conceptualization of profession and tends to continental (European) approach to the concepts of profession and professionalism, professional identity, career trajectory, professional training and cultural competences being kept as subjects of research. The authors have focused on such socially important phenomena of medical specialists' professionalization as reproduction of scientific capability, socially oriented management in medicine, professional deformation and deprofessionalization. The results of authorial initiative studies have proved negative tendency to further development of medical specialists' social deprivation in biomedical sciences and scientific interest gain to bioethical aspects of professionalization in medicine.

Key words*: bioethics, ethical values, professional development, professional group, medical specialists, medical sciences, deprofessionalization.*

БИОЭТИЧЕСКИЙ КОНТЕНТ СОВРЕМЕННЫХ ИССЛЕДОВАНИЙ ПРОБЛЕМЫ ПРОФЕССИОГЕНЕЗА В МЕДИЦИНЕ

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Современные исследования феномена профессионализации в медицине рассматривают социально-психологические детерминанты профессионального развития личности в динамике ее социализации. Поскольку в медицинских науках появляются персонализированная и стратификационная медицина, в междисциплинарном поле медицины, биологии (генетики), химии развиваются биотехнологии лечения социально значимых заболеваний, возникают этические конфликты, которые носят интернациональный характер. В связи с этим современным трендом исследований профессионализации в медицине является его биоэтический контент. Проведенный обзор современных исследованиях в междисциплинарном поле социологии медицины позволил сделать вывод, что в целом российские исследования в своей методологии основаны на классических представлениях о профессии и сохраняют континентальный (европейский) подход к понятиям профессий и профессионализма, сохраняя предметом исследования профессиональную идентичность, карьерные траектории, профессиональное обучение и общекультурные компетенции. Авторами раскрыто содержание таких социально-значимых феноменов профессионализации медицинских специалистов как, воспроизводство научного потенциала, социально-ориентированный менеджмент в медицине, профессиональные деформации, депрофессионализация. Полученные в инициативных авторских исследованиях результаты позволяют прогнозировать дальнейшее развитие негативной тенденции социальной депривации медицинских специалистов в области биомедицинских наук, и увеличение интереса исследователей к биоэтическим аспектам профессионализации в медицине.

Ключевые слова*: биоэтика, этические ценности, профессиональное развитие, профессиональная группа, медицинские специалисты, медицинские науки, депрофессионализация.*

Modern biotechnologies in treatment of socially important diseases (biochips, nanosensors, etc), improvement of medical service in vitro fertilization (IVF), development of medical genetics (human organs and tissues cloning), etc. result in bioethical conflicts growth in society and have an international character [9,17, 19].

At the same time deformation of classical professional structure of a society influenced by new computer technologies as well as medicine functioning

within a market economy determine content changes in professional practice of a physician and in requirements to a specialist personality. Classical sociological theories are modeling Talcott Parsons's descriptive representations of medicine as of an «ideal occupation» which eliminates commercial relations.

The author of one of the main theoretical doctrines in modern sociology – structural functionalism – Talcott Parsons described in details the relationship pattern «doctor-patient» as a «variety of social interrelation». On the basis of Z. Freud, M. Weber and É. Durkheim theories and personal experience of relationships between a doctor and a patient at Taft Medical Center, Talcott Parsons found out the main social mechanisms of professionalism within medical profession model («The Professions and Social Structure», 1939; «The American University», «The Case of Modern Medical Practice», 1942) [13, 14, 15, 16].

In his work «Propaganda and Social Control» Talcott Parsons stated medical profession as the pattern of nonselfish action orientation *"in the sense that a doctor claims to be above all cash payments related to patient's wealth" [2].* In «Remarks on Education and the Professions» he emphasized disinterestedness which distinguishes professional relations from commercial ones. «I have used economic paradigm «rational pursuit of my own personal interests» as a cornerstone (with negative meaning) in order to show the differences between classical market model of economics and that of professionally oriented, the one I have been studying. The main differences are on the surface. On the one hand, practitioners show them off through interdependence of medical service fee and patient's condition, so called sliding scale, or by fee rise for trouble-free patients and fee decrease for those who are troublesome ones. On the other hand, it is reflected through the nature of protest against patients' «commercialism» when doctors are judged from the point of view of their medical service fee amount» [15].

Taken into consideration altruistic activity goals, Talcott Parsons' interpretation of motivational personality component of a professional seems to be interesting. Doctor's professional success, according to T. Parsons, is measured by achievements in a professional group, nature of professional medical practice, medical posts in curative and educational institutions as well as professional dignity and social reputation. Although T. Parsons avoids speaking about economic benefits which professionals may derive from their professional reputation.

Contemporary studies of professionalization phenomenon in medicine from methodological viewpoint are studies on a doctor's modern role as a professional within T. Parsons' social characteristics interpretation: scope, method of obtain, emotional level, formalization and motivation. Thus, categorizing conceptual construct of sociology of medicine is the best correspondence for them as far as it allows finding out social-psychological determinants of personality's professional development against the background of its socialization dynamics. Since personalized and stratified medicine have been developing within medical sciences, whereas biotechnologies in treatment of socially important diseases have started developing within the interdisciplinary area of medicine, biology (genetics) and chemistry, international ethical conflicts are inevitable. It is evidenced by the subject matter of 10th World Conference on Bioethics (UNESCO Chair in Bioethics 10th World Conference on Bioethics, Medical Ethics and Health Law, Jerusalem, Israel, January 6-8, 2015 (www.bioethics-conferences.com). Thereby bioethical content is the modern trend in research of professionalization in medicine.

Blyudnikov S.A. regards medical specialists as a part of academic staff reproduction for medical sciences [2]. The cornerstone of his conception is to assume higher medical institutions as organizations that perform institutional functions of academic staff reproduction in medicine. It has given Blyudnikov S.A. opportunity to solve the problem of academic staff demand at institutional level through spreading social order practice at institutional level – development of higher vocational education (institutions or faculties) in the most in-demand scientific areas of medicine [3].

In his studies Blyudnikov S.A. states that predictable growth of biomedical research as outlined in Federal programs (as a result of which in 2020 Russian pharmaceutical and medical industries will get a great number of inventions in the field of medical products, medical equipment and medicines production) as well as commercialization of all these results demand thorough approach to ethical-legal base formation which includes international synchronization of statutory regulation in biomedical research and extension of national ethics committee network worldwide.

To integrate national medical science into international scientific community it is necessary to bring national ethical-legal base of biomedical research into accordance with international standards, its practical realization being impossible without extension of national ethics committee network [2]. Scientific studies carried out by the author allowed him to conclude that for the solution of statutory regulation problem in medical research it is needed to pass Federal law «On Ethic Committees» certain sections of which should contain regulatory activity for all kinds of investigation and research, including nanotechnological ones. Such law should state the range of subjects involved or interested in clinical research or investigation as well as outline statutory limits for a sponsor, researcher, and health authorities [4]. On the basis of colossal empirical material Karpovich A.V. has proved that social and economic reforms in health care system result in alteration of the doctor-manager role pattern. It is determined by a number of factors: chief manager estrangement from staff members, loss of professional medical functions, dominance of administrative functions over professional ones, urgent necessity to solve conflict problems between medical staff members [6].

Explication of leadership skills in doctors at undergraduate stage made by Karpovich A.V. is of a great practical interest for the system of continuing professional training: according to the survey 20-25% of students in average had leadership skills. Therefore, the author confirmed that their social diagnostics may persistently lead to social attitudes formation and manager-oriented students' encouragement for studying administrative technologies. The latter would give an opportunity to form administrative staff reserve for primary health care system at the undergraduate stage of education [6].

Karpovich A.V. research demonstrates the high level of communication qualities in majority of chief managers as well as altruism of head doctors' personality are mostly determined by professional requirements to medical profession. In particular, according to his survey half of chief managers has shown high (16,65%) and very high (33,4%) scale of communication qualities. Furthermore, high and very high scale of communication qualities are seen less than in physicians' group (14,2% against 7,1%) $p<0,05$. Thus, one may assume that high level of communication qualities in majority of chief managers as well as altruism of head doctors' personality are mostly determined by professional requirements to medical profession.

The author also explicates management associated conflictogenic factors within medical sector: 29,6% of head doctors have had low level of communication qualities and inadequate emotional display; 29,4% have shown the dominance of negative emotions; 25,3% – unwillingness to contact with people, egocentric attitude. According to the researcher, democratic style of management in medical sector is seen in 16,7% of head doctors in average, more conflictogenic – authoritarian style – in 8,3 to 25,6% of the same specialists.In the works of Leonova V.A. the phenomenon of deprofessionalization in medicine has been carefully studied. Deprofessionalization is assumed as a kind of professional group escape before the period of professional activity decay [7]. Leonova V.A. has shown that medical profession is characterized by abnormal deprofessionalization structure. Post-professional model makes the third part of it (32-33%) which is not only determined by modern culture-specific concepts of Russian society and explicated phenomenon of «medical stuff aging» (the average age of most doctors is 46 years, 25% are retired employees), but by the peculiarity of a professional sector studied, i.e. dynamics of professional skills development along with significance of professional experience [8].In Leonova's proceedings one can see that the problem of deprofessionalization in medicine is of multifactorial nature, its further study being necessary within the interdisciplinary area (economics, management, jurisprudence, etc.). The author has carried on ethical expert examination of current legislation issues within pension fund system and her conclusion is that of necessity to modernize legislation by thorough investigation of doctors' deprofessionalization phenomenon. Eventually it results in working out effective socially-oriented measures to stabilize and optimize staffing within National Health Service system.

Scientific research of Rudenko A.Yu. is determined by technological modernization of non-curative professional activity which aggravates patients' expectations for complex laboratory diagnostics. Rudenko's works have proved that medical activity within the area of clinical laboratory diagnostics is specific and corresponds to technical pattern of treating. The scientist

compared communicative aspects and social attitude of doctors engaged in laboratory diagnostics to those who were engaged in treatment. Difference in quantitative measures is no more than 7-10%, ($p<0,05$), but practical competences are determined by certain operational activity (active use of electronic computing, diagnostic and treatment equipment) [10]. The study of social and psychological aspect of doctor's professional role within the area of laboratory diagnostics have proved that medical activity of the given professional group can be viewed as technical pattern of treating. Within this pattern doctor's role is to «fix» any damage to patient's health caused by external or internal factors. The pattern is based on the following notion: medical activity is seen as an area of practical use of scientific knowledge related to natural mechanisms of human organism's activity. Objective knowledge determines the method of treatment which is performed technically. Patient's benefit is seen as the total of objective characteristics, biochemical indices being one of them. Risk transformation of a doctor into «a plumber who fixes and cleans water pipes without questions» is considered to be the drawback of this pattern.

According to the authorial social research about 25% of graduated medical students are going to be professionally engaged in scientific research work. At the same time personality evaluation according to Potemkin's methodology has shown that more than 36% (30 to 45,6% in different pattern groups) of graduated medical students are ego-oriented, less than 25% observe moral values as the most preferable in professional activity.

Ayvazyan Sh.G. in his turn proved by research that modern science-intensive technologies as well as high tech medical aid development lead to widening of a therapeutist's role repertory. On the contrary low salary of medical professionals (according to 78,8% respondents of focus group economic factor related to low quality medical aid is of high-priority) make 47% of them work more hours than normal (23,9% twice as their wage-rates). Thus, it results in overworking and stress development determined by professional activity of a doctor and provokes moral values decrease related to the profession (the problem discussed by 44,7% respondents of focus group) [1].

Ayvazyan Sh.G. has evaluated social effectiveness of out-patient service. Most of the respondents (88,8%) were more or less satisfied with local therapeutic medical service. 85,8% were satisfied with local pediatric medical service. The number of totally «unsatisfied» respondents was almost the same – 14,2% (against 11,2%, $p>0,05$). Wherein answerers were more satisfied with work of local therapeutists than that of other specialties (88,8% and 72,3% respectively). Nevertheless main reasons of patients' claims to «League of patients» were ethics standards transgressions: doctor's rudeness, unwillingness to explain risks or comments on health state or alternatives, etc. Initiative authorial research make possible to give negative prognoses of further social deprivation development of medical specialists within biomedical field of science. Thus, it is necessary to optimize bioethical system of scientific research in medicine and to implement main bioethical principles (Declaration on Bioethics and Human Rights, 2005) into current legislation of the Russian Federation.

Proceedings of modern conferences organized in 2011-2015 by UNESCO Chair in Bioethics within the World Conference on Bioethics, Medical Ethics and Health Law have proved the process of active integration into international professional medical education programs on Bioethics that will contribute to scientists' interest increase to bioethical aspects of professionalization in medicine [12, 17].

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THE BIOETHICAL BASIS OF CLINICAL ENGINEERING

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This is an attempt to analyze the phenomenon of a clinical engineering and clinical engineer`s position in terms of the norms and principles of bioethics. There is proved the presence of feedback in the bioethical regulation of development, testing and maintenance of biomedical devices, and the importance in this regard, the institute of clinical engineering. It was found that the clinical engineer is a translator of a competences, capable to a comprehensive, summary analysis of the technical and clinical incidents in the operation of medical equipment with the construction of generalizing conclusions that are suitable for consideration from the standpoint of bioethics, and to the implementation of formalized and non-formalized regulations, standards and elements of a clinical experience in the development phase of new types of biomedical equipment and materials.

Key words: *clinical engineering, medical equipment, life cycle, bioethical control, feedback.*

БИОЭТИЧЕСКИЕ ОСНОВЫ КЛИНИЧЕСКОГО ИНЖИНИРИНГА

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В работе делается попытка анализа такого явления, как клинический инжиниринг, и положения клинического инженера с точки зрения норм и принципов биоэтики. Показано наличие обратной связи в области биоэтического регулирования разработки, испытаний и эксплуатации биомедицинских устройств, а также важность в этой связи института клинического инжиниринга. Установлено, что клинический инженер является транслятором компетенций, способным как к комплексному, обобщающему анализу технических и клинических эксцессов при эксплуатации медицинской техники с выдачей обобщающих заключений, пригодных для рассмотрения с позиций биоэтики, так и к имплементации, формализованных и неформализованных нормативных положений, стандартов и элементов клинического опыта на этапе разработки и проектирование новых видов биомедицинского оборудования и материалов.

Ключевые слова: *клинический инжиниринг, медицинская техника, жизненный цикл, биоэтический контроль, обратная связь.*

Clinical engineering was originated in the western countries in the second half of the XX century as a response to the rapid increase the practical public health`s dependency from the complex electronic devices. This area of activity is associated mainly with medical equipment, but also associated with the study of the interactions between the effects of drugs, medical procedures and medical equipment to the extent that is necessary to ensure maximum safety and effectiveness of the treatment process. Scope of clinical engineers is growing with increasing of use of sophisticated medical equipment and includes not only hospitals but also clinics and outpatient medical facilities, as well as the development and testing of medical equipment.

The prevailing opinion about the engineer in the health care system is as a member of the medical institution`s administration or as a specialist for repair and maintenance of medical equipment. Despite the importance of these areas of activity of clinical engineers, it must be marked that their main task is to ensure the safe operation of technical medical institution as a whole, the improvement of health care delivery technology and to maximize the use of available technical possibilities in the treatment process. In addition, having basic engineering skills, as well as the biomedical, a clinical engineer should be an important part of providing feedback of producers and consumers of sophisticated medical equipment,