

DOI: <https://doi.org/10.32353/khrife.1.2019.038>

UDC 616–091.0

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COMPARATIVE ASSESSMENT OF THE FREQUENCY OF MEDICAL DEFECTS DEFECTS WITH REGARD TO THE LIKELIHOOD OF DEVELOPMENT OF EMOTIONAL HEALING SYNDROME

The problem of proper / inadequate medical care (MC) in the forensic aspect is relevant for domestic healthcare. The reasons leading to the occurrence of defects in the MC vary from accidents and medical malpractice to careless actions and deliberate crimes of medical workers. However, during comprehensive forensic medical expertise (CFME), an important aspect of the problem remains out of sight of the researchers, particularly: the development of an emotional burnout syndrome (EBS) at doctor who has provided MC.

The subject of the study are 208 conclusions of CFME, according to the archival material of the National Bureau of Expertise of the National Academy of Sciences of the Republic of Armenia for the period from 2006 to 2012, as well as 141 questionnaires of the EBS, filled by doctors in the framework expertise of «medical cases». Defects in MC were classified as follows: diagnostics defects; treatment defects; defects in the organization of medical care; defects in keeping medical records.

Research Purpose Assessment of the frequency of defects in the provision of medical care, considering the likelihood of the development of emotional burnout syndrome at doctors based on materials from comprehensive forensic medical expertise.

According to the findings of CFME 408 MP defects were recorded. Defects of diagnostics are the most common (30.1%), the least common defects are the medical documentation defects (17.6%). Defects of MC were detected at doctors of 23 specialties. The first 3 «leading» places are occupied by surgeons, obstetricians-gynecologists and resuscitators (14.5%, 14.0% and 12.4%, respectively). The presence (58; 41, 1%) or the formation EBS (59; 41, 8%) was

detected by the moment of providing CFME at the overwhelming number of doctors, which made MC defects. The absence of EBS was detected only at 24 respondents (17, 0%). EBS was present mostly at respondents, anesthesiologists, obstetricians-gynecologists, surgeons and pediatrician. An analysis of the relationship between the likelihood of EBS development and the frequency of allowed defects in providing MC has shown that as the EBS forms, the number of diagnostic defects, treatment defects and defects in keeping medical records increases.

Thus, there are several specialties for which the development of the EBS is a very likely event: resuscitation, anesthesiology, gynecology and surgery, with the most severe degree of the EBS being developed by resuscitation and anesthesiologists. Formation of the EBS at doctors of various specialties is accompanied by an increase in the probability of occurrence of defects in MC. In this case, the most likely is the occurrence of defects in the treatment and documentation of anesthetists, gynecologists, resuscitators and surgeons. Here we should highlight the specialty «resuscitator» with the highest risk of treatment defects and defects in keeping medical records.

Keywords: diagnostic defects, treatment defects, defects in organization of medical care, defects in keeping medical records, comprehensive forensic-medical expertise, proper medical care, emotional burnout syndrome.

Formulation of Research Problem. The problem of adequate/inadequate medical care (MC) in the forensic aspect is relevant for domestic health care and requires large-scale research in various areas, which, of course, will help reduce the number of medical errors and various defects in the provision of MC.

The causes leading to the appearance of MP defects vary widely: from accidents and medical errors to careless actions and intentional crimes of medical workers. An accident in medical practice is understood as an unfavorable outcome of treatment, which was the result of an accidental combination of circumstances and which, in the most conscientious attitude of the doctor to his official duties, could not be foreseen¹. Medical error: accidental harm to the life or health of a patient caused by erroneous actions or inaction of a medical worker, characterized by his bona fide delusion with due regard to professional duties and the absence of signs of intent, negligence, negligence or negligence².

¹ Kiseleva, I. Kriterii sudebno-meditsinskoi otsenki professional'nykh oshibok i neblagopriyatnykh iskhodov pri okazanii dermatokosmetologicheskoi pomoshchi [Criteria for forensic assessment of professional errors and adverse outcomes in the provision of dermatological and cosmetological assistance] (Moscow, 2010) (in Russian). URL: <http://medical-diss.com/medicina/kriterii-sudebno-meditsinskoy-otsenki-professionalnyh-oshibok-i-neblagopriyatnyh-ishodov-pri-okazanii-dermatokosmetologic> (access 13.07.2019).

² Sharabchiev, Yu. Vrachebnye oshibki i defekty okazaniya meditsinskoi pomoshchi: sotsial'no-ekonomicheskie aspekty i poteri obshchestvennogo zdorov'ya [Medical errors and defects in the provision of medical care: socio-economic aspects and loss of public health] (in Russian). URL:

While conducting forensic panel examinations (FPE), an important aspect of the problem remains outside the field of view of the researcher, namely: the development of a physician who has had an MP and, as a result, a defendant in the claim of the patient, emotional burnout syndrome (EBS). In this case, the development of CMEA in these physicians is possible both at the stage of rendering MP and in the very process of conducting CSME.

Analysis of Current Researches. Burnout syndrome is a reaction of the body that occurs because of prolonged exposure to moderate-intensity¹ occupational stresses. The terms: *burnout syndrome*, *professional burnout*, *chronic fatigue syndrome*^{2, 3, 4}, are also often used as a synonym. Common manifestations of CMEA are⁵: a sense of indifference, emotional exhaustion and exhaustion; dehumanization; negative self-perception in a professional way.

It should be noted that in the International Classification of Diseases and Behavioral Disorders (ICD-10), EBS is classified in the Z-73 diagnostic taxon – *Problems related to life-management difficulty* and is coded as Z-73.0: *Fatigue – The state of vital exhaustion* (in Russian) and *Burnout – State of vital exhaustion* (in English)⁶.

First, representatives of professions related to direct work with people and / or high responsibility for others (doctors, teachers, psychologists, social workers, rescuers, etc.) are exposed⁷. The doctors,

<https://cyberleninka.ru/article/n/vrachebnye-oshibki-i-defekty-okazaniya-meditsinskoy-pomoschi-sotsialno-ekonomicheskie-aspekty-i-poteri-obschestvennogo-zdorovya> (access 13.07.2019).

¹ Vodopyanova, N., Starchenkova, E. S. Sindrom vygoraniya: diagnostika i profilaktika [Burnout syndrome: diagnosis and prevention] (Sankt-Peterburg, 2008) (in Russian).

² Orel, V. 'Fenomen «vygoraniya» v zarubezhnoi psikhologii: empiricheskie issledovaniya' ['The phenomenon of burnout in foreign psychology: empirical research'] (2001) Psikhologicheskii zhurnal 1:90–91 (in Russian).

³ Pigarova, E., Pleshcheva, A., Dzeranova, L., Rozhinskaya, L. Sindrom khronicheskoi ustalosti: sovremennye predstavleniya ob etiologii [Chronic Fatigue Syndrome: Modern Concepts of Etiology] (in Russian). <https://cyberleninka.ru/article/n/sindrom-hronicheskoy-ustalosti-sovremennye-predstavleniya-ob-etologii> (access 13.07.2019).

⁴ Sindrom emotsional'nogo vygoraniya [Burnout Syndrome] (in Russian). URL: <http://womanadvice.ru/sindrom-emotsionalnogo-vygoraniya> (access 13.07.2019).

⁵ Ronginskaya, T. Sindrom vygoraniya v sotsial'nykh professiyakh [Burnout syndrome in social professions] (2002) 3:85–95 (in Russian).

⁶ International classification of diseases 10th revision. URL: <http://apps.who.int/classifications/icd10/browse/2016/en#/Z73> (access 13.07.2019).

⁷ Alekseev, A. Vrachy – zalozhniki smerti (Pochemu vrachi umirayut Na 10–20 let ran'she svoikh patsientov) [Doctors are hostages of death (Why do doctors die 10–20 years earlier than their patients)] (Moscow, 2000) (in Russian);

CMEA most often develops among anesthetists, resuscitators, neuropathologists, psychiatrists and pediatricians¹. Most of the authors among the reasons for the development of CMEA among doctors of various specialties distinguish production and non-production premises. The leading place is given to excessive workload, irregular work and too high responsibility for the result of labor². Among the non-productive factors in the development of CMEA, the authors note a deep dissatisfaction with the contradiction between the extremely high workload, its social significance and the extremely low economic equivalent¹⁹.

The work of the doctor has the following peculiarities³:

- Work of a doctor requires considerable emotional investments, as it relates to communication with people (negative emotions, experiences, conflicts);

- work of a doctor requires intellectual and temporary investment in education and continuous postgraduate education;

- work of the doctor relates to night watch, not working day;

Karaseva, O. Sindrom vygoraniya v rabote vrachei [Burnout syndrome in the work of doctors] (in Russian). URL: <http://medstrana.com/articles/3040/> (access 13.07.2019).; *Koroleva, E., Shuster, E.* Sindrom emotsional'nogo vygoraniya [Burnout Syndrome] (in Russian). URL: <https://cyberleninka.ru/article/n/sindrom-emotsionalnogo-vygoraniya> (access 13.07.2019).; *Ognerubov, N.* Sindrom emotsional'nogo vygoraniya u vrachei [Burnout syndrome at doctors] (in Russian). URL: <https://cyberleninka.ru/article/n/sindrom-emotsionalnogo-vygoraniya-u-vrachey> (access 13.07.2019).

¹ *Andersen, i., Borritz, M., Christensen, K.B. et al.* Changing job-related burnout after intervention-a quasi-experimental study in six human service organizations. *J Occup Environ Med.* 2010;52(3):318–23; *Bragard I., Libert Y., Etienne A.M., Merckaert i. et al.* insight on variables leading to burnout in cancer physicians. *Journal of Cancer Education.* 2010;25(1):109–15; *Di Iorio B., Cillo N., Cucciniello E., Bellizzi V.* Burn-out in the dialysis unit. *J Nephrol.* 2008;21(13):158–62; *Ruotsalainen JH, Verbeek JH, Mariné A, Serra C.* Preventing occupational stress in healthcare workers. *Cochrane Database of Systematic Reviews* 2015, Issue 4; *Tanriverdi O.* A medical oncologist's perspective on communication skills and burnout syndrome with psycho-oncological approach (to die with each patient one more time: the fate of the oncologists)// *Med Oncol.* 2013;30 (2):530; *Ovsepyan A.* Stepen' vyrazhennosti sindroma emotsional'nogo vygoraniya u vrachei, dopustivshikh defekty okazaniya meditsinskoj pomoshchi [The severity of burnout syndrome in doctors who have committed defects in the provision of medical care] (2014) *Meditinskaya Nauka Armenii* 3:18–29. (in Russian).

² *Galimov, A.R.* Stress Na rabote u vrachei-khirurgov i ego profilaktika [Stress at work with surgeons and its prevention] (Moscow, 2006) (in Russian). URL: <http://www.dissercat.com/content/stress-na-rabote-u-vrachei-khirurgov-i-ego-profilaktika> (access 13.07.2019).

³ *Karaseva, O.* Sindrom vygoraniya v rabote vrachei [Burnout syndrome in the work of doctors] (in Russian). URL: <http://medstrana.com/articles/3040/> (access 13.07.2019).

– there are many difficulties in the work of the doctor in connection with the reporting, which takes time and can be a source of conflict with the management;

The need for financial support for oneself and family often conflicts with the professional aspirations of a physician.

Research Purpose. Assessment of the frequency of defects in the provision of medical care, considering the likelihood of the development of emotional burnout syndrome in doctors based on materials of forensic medical examinations.

Main content presentation. The object of the study was 208 FPE findings, according to the archival material of the forensic examination department of the National Academy of Sciences of the National Academy of Sciences of the Republic of Armenia for the period from 2006 to 2012, as well as 141 questionnaires of the EBS questionnaire, completed by doctors involved in *medical cases*. For the analysis of the structure of defects of rendering of MC we have classified them as follows: defects of diagnostics; treatment defects; defects in the organization of medical care; defects in keeping medical records.

To assess the frequency and severity of EBS; the method of individual interviewing of doctors passing on *medical cases* was used with the help of the questionnaire V. V. Boyko¹. However, in this work, we used the questionnaire of V. V. Boyko, due to the fact that: firstly, in the questionnaire of V. V. Boyko, the number of questions asked to the subject was expanded to 84; secondly, V. V. Boyko, considering that EBS, is a stressful situation, and therefore, pathogenetically can be classified as a practical application of the provisions of the general adaptation syndrome G. Selye (1936), instead of the scales proposed by Maslach and C. Jackson introduced the three phases of EBS development: *stress, resistance, exhaustion (alarm reaction, stage of resistance and stage of exhaustion)*. Completing the questionnaire according to V. V. Boyko methodology was conducted solely on a voluntary basis and with confidentiality, which was documented in the form of informed voluntary consent of the respondents. The material of the questionnaire consists of 84 statements vis-a-vis the subject should express his/her attitude in the form of unambiguous yes or no answers. Each answer (yes or no) is evaluated by one or another number of points, since the signs included in the symptom have different meanings in determining its severity. A quantitative calculation of the severity of an individual symptom is made, the summation of symptom indicators for each of the EBS phases, the determination of the total EBS indicator. Interpretation is based on qualitative and quantitative analysis, which is carried out by comparing the results within each phase. The results of the studies were statistically

¹ Boiko, V. Sindrom «emotsional'nogo vygoraniya" v professional'nom obshchenii [Burnout syndrome in professional communication] (Sankt-Peterburg, 1999) (in Russian).

processed using parametric and non-parametric criteria (depending on the distribution of the analyzed values) using the SPSS-25, 0 program. One-way analysis of variance (ANOVA) was used to analyze the frequency and severity of EBS.

To determine the significance of differences between group averages in the analysis of variances for the compared samples: *stress*, *resistance*, *exhaustion*, the posterior Duncan multiple comparison criterion was used.

Spearman correlation analysis was used to identify the relationship between the severity of EBS and the type of medical specialty.

To identify the relationship between the severity of EBS and the frequency of physicians' admission of defects in the provision of MC; the analysis was performed using Pearson's consent criterion χ^2 , as well as the calculation of relative risk (RR).

Research results. According to the conclusion of 208 FPE in 141 (67, 8%) cases, various defects in the delivery of MPs were detected, and in 67 (32, 2%) cases, such defects were not registered. Therefore, further analysis was carried out by us for a sample of data including defects in the delivery of MC: 141 cases.

Table 1

Structure and frequency of MC defects

Type of MC defect	absolute expression	%
defects in diagnosis	123	30, 1
treatment defects	106	26, 0
defects in the organization of MC	107	26, 2
defects in medical records	72	17, 6
Total	408	100, 0

As can be seen from Table. 1, according to the 141st opinion of the FPE, 408 defects of rendering of MC were recorded. Diagnosis defects (30, 1%) were most often admitted, and medical records defects (17, 6%) were the least common.

Table 2

Distribution of doctors who have admitted defects of rendering of MC to areas of specialization

N	Area of specialization	absolute expression	%
1	physician	15	7, 8
2	surgeon	28	14, 5
3	obstetrician-gynecologist	27	14, 0
4	pediatrician	23	11, 9
5	anesthesiologist	11	5, 7
6	resuscitator	24	12, 4

7	neurosurgeon	7	3, 6
8	vascular surgeon	1	0, 5
9	urologist	4	2, 1
10	orthopedic traumatologist	11	5, 7
11	Otolaryngologist	1	0,5
12	cardiologist	6	3, 1
13	neurologist	6	3,1
14	phthisiologist	3	1,6
15	oncologist	1	0,5
16	psychiatrist	2	1,0
17	neonatologist	3	1,6
18	toxicologist	2	1,0
19	radiologist	2	1,0
20	ultrasound doctor	1	0,5
21	dentist	1	0,5
22	ambulance doctor	6	3,1
23	military doctor	8	4,2
Total		193	100,0

As can be seen from Table. 2, defects of rendering of MP were revealed at doctors of 23 specialties. Of these, the first 3 «leading» places are occupied by surgeons, obstetricians and resuscitators (14, 5%, 14, 0% and 12, 4% respectively).

It should be noted that in most cases, defects in the provision of MC were the result of inappropriate actions of two, and often three, specialist doctors. The largest number of cases of joint defects in the provision of MC was allowed by resuscitators (20, 2%) and surgeons (16, 2%). Thus, in the conditions of the *transfer* of the patient from one specialist to another, there was a lack of continuity during the treatment and diagnostic process, and in the case of joint management of one patient by several specialists, there was a lack of coordination of certain diagnostic and therapeutic measures.

141 (73, 1%) doctors replied on the questions of the Boyko questionnaire. The remaining 52 questionnaires (26, 9%) were left blank or filled with defects for various reasons (non-appearance of the respondent, misinterpretation of questionnaires, non-return of questionnaires, refusal to fill in the questionnaire).

It should be noted that the results of our survey can be considered representative, since according to the accepted international standards the level of attainment of response for sociological research is more than 50% considered representative.

Table 3

The degree of EBS severity in physicians who have admitted defects in the provision of MC

N	Area of specialization	N	EBS					
			lack		formation		availability	
			absolute expression	%	absolute expression	%	absolute expression	%
1	physician	4	1	25, 0	3	75, 0	—	—
2	surgeon	27	5	18, 5	13	48, 1	9	33, 3
3	obstetrician-gynecologist	24	9	37, 5	6	25, 0	9	37, 5
4	pediatrician	21	5	23, 8	9	42, 9	7	33, 3
5	anesthesiologist	11	1	9, 1	4	36, 4	6	54, 5
6	resuscitator	19	—	—	8	42, 1	11	57, 9
7	neurosurgeon	5	—	—	3	60, 0	2	40, 0
8	urologist	3	—	—	2	66, 6	1	33, 3
9	traumatologist	9	1	11, 1	6	66, 6	2	22, 2
10	cardiologist	6	—	—	1	16, 6	5	83, 3
11	neurologist	6	—	—	2	33, 3	4	66, 6
12	phthysiologist	1	1	100, 0	—	—	—	—
13	neonatologist	1	—	—	1	100, 0	—	—
14	radiologist	2	1	50, 0	—	—	1	50, 0
15	ultrasound doctor	1	—	—	—	—	1	100, 0
16	dentist	1	—	—	1	100, 0	—	—
Total		141	24	17, 0	59	41, 8	58	41, 2

As can be seen from Table. 3, the overwhelming majority of respondents noted the availability (58 people; 41, 1%) or the formation of EBS (59 people; 41, 8%). Only 24 (17, 0%) respondents reported that there was no EBS.

The *resuscitation* area of specialization should be noted: for example, out of 19 resuscitators surveyed, 57.9% had a EBS and 42.1% had a EBS in the formation stage.

It is also possible to note area of specializations *cardiology* (presence – 83, 3%; formation: 16, 7%), *neuropathology* (availability: 66, 7%; formation – 33, 3%) and *neurosurgery* (availability: 40, 0%; formation– 60, 0%). In other cases, the comparative assessment was considered inappropriate because of the small number of samples (from 1 to 5 respondents). Thus, at the time of the FPE, the overwhelming number of doctors of different specialties who admitted defects in MC provision was noted EBS *in progress* (41, 2%) or in the formation stage (41, 8%).

Most of the EBS was available from resuscitators (57, 9%), anesthetists (54, 5%), obstetricians-gynecologists (37, 5%), surgeons and pediatricians (33, 3%). Representatives of the above specialties in a slightly different sequence also took the lead in the «CMEA formation» gradation: surgeons (48, 1%), pediatricians (42, 9%), resuscitators (42, 1%), anesthetists (36, 4%) and obstetrician-gynecologists (25, 0%). Resuscitators, who in 100% of cases have CMEA «in progress» or in the formation stage, should be considered the unconditional *leader*.

I was interested in the question of which medical professions are most likely to be exposed to EBS. To address this issue, we conducted an analysis of the correlation relationships between the probability of developing EBS and different types of medical area of specializations.

Table 4

Correlation between the probability of developing EBS and medical area of specializations

Indicators of correlation	Medical area of specialization									
	1	2	3	4	5	6	7	8	9	10
r_s	0,02	-0,21*	0,12	0,02	0,11	-0,10	0,26**	-0,02	0,07	0,25**
p	0,84	0,03	0,20	0,81	0,25	0,32	0,01	0,83	0,47	0,01

Note: 1 – anesthetists, 2 – gynecologists, 3 – cardiologists, 4 – neuropathologists, 5 – neurosurgeons, 6 – pediatricians, 7 – resuscitators, 8 – therapists, 9 – traumatologists, 10 – surgeons; * – marked significance level $p = 0,05$; ** – the significance level $p = 0,001$ is marked.

As can be seen from the table. 4, there is a positive weak correlation ($r_s = 0,26$ and $r_s = 0,25$) with high significance ($p = 0,01$) between the likelihood of developing CMEA and the specialties «resuscitator» and *surgeon*. There is a negative weak significant correlation between the likelihood of CMEA and the specialty «gynecologist» ($r = -0,21$, $p = 0,03$). Between other specialties and the likelihood of developing CMEA, correlation relationships are much weaker and almost tend to zero.

To test this hypothesis, we conducted an analysis of the relationship between the probability of developing EBS on the one hand and the frequency of physician's admission of defects in rendering MC – on the other.

Table 5

Relationship between the probability of developing EBS and the frequency of diagnostic defects

Criterion	Meaning	Degree of freedom	Significance
Pearson's chi-squared test	20, 260	1	0, 000
Yates's correction for continuity	17, 353	1	0, 000
Likelihood ratio	16, 593	1	0, 000
F-test			0, 000

The given value of the criterion χ^2 is greater than the critical one (3, 841; $\alpha = 0.05$ with one degree of freedom), therefore, there is a statistically significant relationship between the probability of developing EBS and the frequency of diagnostic defects.

The value of the χ^2 criterion with the Yates correction is 17, 353 ($p = 0, 000$), and the likelihood ratio is 16, 593 ($p = 0, 000$), which is also greater than the critical value (3, 841). Therefore, the presence of a connection is confirmed, namely: as the formation of CMEA the number of diagnostic defects increases.

Table 6

The relative risk of diagnosis defects depending on EBS development

Criterion	Meaning	95% confidence interval	
		Lower boundary	Upper border
OP	1, 704	1, 158	2, 506

As can be seen from the table. 6, $RR = 1, 704$ at 95% CI from 1, 158 to 2, 506, which indicates that as the CMEA is formed, the risk of diagnostic defects increases. However, the CI range includes 1, which means the result is not statistically significant. Despite this, the width of the CI gives a clear idea of what OR values can take in 95% of cases, and this allows us to attribute the results to clinically important (clinical importance).

Table 7

Relationship between likelihood of EBS development and the incidence of treatment defects

Criterion	Meaning	Degree of freedom	Significance
Pearson's chi-squared test	10, 556	1	0, 001
Yates's correction for continuity	8, 880	1	0, 003
Likelihood ratio	9, 651	1	0,002
F-test			0, 002

As can be seen from the table 7, Pearson's χ^2 criterion is: $\chi^2_{(1)} = 10,556$ ($p=0,001$).

This value of the χ^2 criterion is more than critical (3,841; $\alpha = 0.05$ for one degree of freedom); therefore, there is a statistically significant relationship between the likelihood of CMEA and the frequency of treatment defects. The value of the χ^2 criterion with the Yates correction is equal to 8,880 ($p = 0,003$), and the likelihood ratio is 9,651 ($p = 0,002$), which is also more than the critical value (3,841). Consequently, the presence of a relationship is confirmed, namely: as the CMEA forms, the number of treatment defects increases.

Table 8

Relative risk of diagnosis defects depending on EBS development

Criterion	Meaning	95% confidence interval	
		Lower boundary	Upper border
OP	1,760	1,100	2,816

As can be seen from the table. 8, OP=1,760 at 95% ДИ from 1,100 to 2,816, which indicates that with the formation of CMEA, the risk of treatment defects increases. The ДИ range includes 1 and, therefore, the result is not statistically significant, but the results can be attributed to clinically important.

Table 9

Relationship between developing probability of EBS and the frequency of defects in MC organization

Criterion	Meaning	Degree of freedom	Significance
Pearson's chi-squared test	0,268	1	0,604
Yates's correction for continuity	0,062	1	0,803
Likelihood ratio	0,276	1	0,599
F-test			0,789

As can be seen from the table. 9, the Pearson criterion χ^2 is: $\chi^2 (1) = 0,268$ ($p = 0,604$). This value of the χ^2 criterion is less than critical (3,841; $\alpha = 0.05$ for one degree of freedom); therefore, there is no statistically significant relationship between the probability of CMEA development and the frequency of defects in the organization of MCs. The value of the χ^2 criterion with the Yates correction is 0,062 ($p = 0,803$), and the likelihood ratio is 0,276 ($p = 0,599$), which is also less than the critical value (3,841). Therefore, the lack of communication is confirmed.

Table 10

Relative risk of diagnosis defects depending on EBS development

Criterion	Meaning	95% confidence interval	
		Lower boundary	Upper border
OP	0, 929	0, 714	1, 208

As can be seen from the table 10, OP=1, 929 at 95% ДИ from 1, 714 to 1, 208, which indicates that with the formation of CMEA, the risk of treatment defects increases. The ДИ range includes 1 and, therefore, the result is not statistically significant, but the results can be attributed to clinically important.

Table 11

Relationship between the EMC developing probability and the frequency of documentation defects

Criterion	Meaning	Degree of freedom	Significance
Pearson's chi-squared test	13, 873	1	0, 000
Yates's correction for continuity	12, 101	1	0, 001
Likelihood ratio	13, 671	1	0, 000
F-test			0, 000

As can be seen from the table. 11, the Pearson criterion χ^2 is: $\chi^2 (1) = 0, 873$ ($p = 0, 000$). This value of the χ^2 criterion is less than critical (3, 841; $\alpha = 0.05$ for one degree of freedom); therefore, there is no statistically significant relationship between the probability of CMEA development and the frequency of defects in the organization of MCs. The value of the χ^2 criterion with the Yates correction is 0, 101 ($p = 0, 001$), and the likelihood ratio is 0, 671 ($p = 0, 000$), which is also less than the critical value (3, 841). Therefore, the presence of a connection is confirmed, namely: as the formation of the CMEA, the number of defects in documentation is increased.

Table 12

Relative risk of diagnosis defects depending on EBS development

Criterion	Meaning	95% confidence interval	
		Lower boundary	Upper border
OP	2, 588	1, 290	5, 191

Therefore, the presence of a connection is confirmed, namely: as the formation of the EBS, the number of defects in documentation is increased. The CI range includes 1 and therefore the result is not statistically significant, but the results can be considered clinically important. It was of great interest to find out the correlation between the severity of EBS in doctors of different specialties and the likelihood of

occurrence of defects of MC, since the detection of such could be judged on the negative role of «burned out» specialists in the process of occurrence of MC defects, especially while *working in the team*.

Table 13

Correlational links between risk of EBS developing in doctors of various specialties and defects in MC

Area of specialization	Indicators of correlation	defects in the organization of MC			
		1	2	3	4
anesthesiologist	r	0, 15	0, 67*	–	0, 67*
	p	0, 662	0, 024	–	0, 024
gynecologist	r	0, 37	0, 64**	–	0, 60
	p	0, 079	0, 001	–	0, 071
cardiologist	r	–	–	–	–
	p	–	–	–	–
neurologist	r	–	–	–	–
	p	–	–	–	–
neurosurgeon	r	–	–	–	–
	p	–	–	–	–
pediatrician	r	–	0, 01	-0, 35	0, 19
	p	–	0, 953	0, 116	0, 400
resuscitator	r	0, 13	0, 84**	0, 17	0, 63**
	p	0, 595	0, 000	0, 493	0, 002
physician	r	-0, 58	0, 58	–	0, 58
	p	0, 423	0, 423	–	0, 423
traumatologist	r	-0, 13	0, 40	0, 66	-0, 25
	p	0, 749	0, 292	0, 052	0, 516
surgeon	r	-0, 03	0, 23	-0, 43	0, 51**
	p	0, 900	0, 250	0, 027	0, 007

Note: 1 – diagnostic defects; 2 – treatment defects; 3 – defects in the organization of medical care; 4 – defects in keeping medical records.

* – marked significance level $p = 0, 05$; ** – significance level $p = 0, 001$ is marked.

As can be seen from the table 13, there is an average strength between the area of specialization *gynecologist*, «*therapist*» and defects in diagnostics, however, the insignificant correlation ($r_s = 0, 37$ and $r_s = -0, 58$). There is no correlation between the other specialties and defects in diagnosis.

Between the areas of specializations *anesthesiologist*, *gynecologist* and treatment defects, a significant positive correlation between the mean strength was observed ($r = 0, 67$ and $r = 0, 64$, respectively). There is a

strong positive correlation ($r_s = 0,84$) with a high degree of significance ($p = 0,0001$) between the area of specialization *resuscitator* and treatment defects.

There is an average strength between the specialty's *therapist*, *traumatologist* and treatment defects, however, there is a slight positive correlation ($r_s = 0,58$ and $r_s = 0,40$, respectively). There is no correlation between the other specialties and defects in diagnosis.

Between the *surgeon* area of specialization and defects in the organization of MP, there is an average negative significant correlation relationship ($r_s = -0,43$; $p = 0,027$). There is an average strength between the specialty's *therapist*, *traumatologist* and treatment defects, however, there is a slight positive correlation ($r_s = 0,35$ and $r_s = 0,66$, respectively). There is no correlation between other medical specialties and defects in MC management.

Between areas of specialization: of *anesthesiologist*, *resuscitator*, *surgeon* and defects in keeping documentation there is a significant positive significant correlation relationship ($r_s = 0,67$; $r_s = 0,60$; $r_s = 0,63$ and $r_s = 0,51$ respectively). There is an average strength between the areas of specialization *gynecologist*, *therapist* and defects in maintaining medical records, however, a negligible positive correlation ($r_s = 0,60$ and $r_s = 0,58$, respectively). There is no correlation between the other specialties and defects in diagnosis.

Conclusions. Thus, there are several specialties for which EBS development is a very probable event with a regular transition from one phase to another, a higher phase. Such specialties are in descending order: neuropathology, cardiology, resuscitation, anesthesiology and neurosurgery. It can be stated that the most severe degree of EBS develops in resuscitators and anesthetists. The formation of EBS in physicians of different specialties is accompanied by an increase in the likelihood of MC defects. In this case, the most likely is the occurrence of defects in treatment and defects in maintaining medical records in anesthetists, gynecologists, resuscitators and surgeons. The *resuscitator* area of specialization with the highest risk of treatment defects and medical records defects should be emphasized here.

It can be assumed that the leading symptoms of EBS: reduction of professional responsibilities and the expansion of the field of economy of emotions lead these doctors to a frank reluctance to engage in *writing* with an emphasis on more productive aspects of professional activity (diagnostic and therapeutic issues) that eventually are flawed.

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ПОРІВНЯЛЬНА ОЦІНКА ЧАСТОТИ ДЕФЕКТІВ МЕДИЧНОЇ
ДОПОМОГИ З УРАХУВАННЯМ ЙМОВІРНОСТІ РОЗВИТКУ
СИНДРОМУ ЕМОЦІЙНОГО ВИГОРАННЯ У ЛІКАРІВ

Проблема належної/неналежної медичної допомоги (МП) у судово-медичному аспекті є актуальною для вітчизняної охорони здоров'я. Причини, що ведуть до виникнення дефектів МП, варіюють від нещасних випадків і лікарських помилок до необережних дій та умисних злочинів медичних працівників. Однак при проведенні комісійних судово-медичних експертиз (КСМЕ) поза увагою дослідників залишається важливий аспект проблеми, а саме: розвиток у лікаря, котрий надає МП, синдрому емоційного вигорання (СЕВ).

Об'єктом дослідження стали 208 висновків КСМЕ, за даними архівного матеріалу «Національного бюро експертиз» Національної академії наук Республіки Вірменія за період з 2006 по 2012 рік, а також 141 анкета опитувальника СЕВ, заповнена лікарями, що проходять за «лікарськими справами». Дефекти МП класифікували наступним чином: дефекти діагностики; дефекти лікування; дефекти організації медичної допомоги; дефекти ведення медичної документації.

Метою дослідження є оцінка частоти дефектів надання медичної допомоги з урахуванням ймовірності розвитку синдрому емоційного вигорання у лікарів за матеріалами комісійних судово-медичних експертиз.

За даними висновків КСМЕ, зафіксовано 408 дефектів МП. Найбільш часто допускалися дефекти діагностики (30, 1%), найменш часто – дефекти ведення медичної документації (17, 6%). Дефекти МП були виявлені у лікарів 23 спеціальностей. З них перші 3 «лідуючих» місця займають хірурги, акушери-гінекологи і реаніматологи (14, 5%, 14, 0% і 12, 4% відповідно). До моменту проведення КСМЕ у переважній кількості лікарів різних спеціальностей, які допустили дефекти надання МП, зазначалася наявність (58; 41, 1%) або ж формування СЕВ (59; 41, 8%). Відсутність СЕВ зазначалося всього у 24-х (17, 0%) респондентів. Здебільшого СЕВ наявний у реаніматологів, анестезіологів, акушерів-гінекологів, хірургів і педіатрів. Аналіз взаємозв'язку між ймовірністю розвитку СЕВ і частотою допущення лікарями дефектів надання МП показав, що у міру формування СЕВ збільшується число дефектів діагностики, лікування і ведення медичної документації.

Таким чином, можна виділити кілька спеціальностей, для яких розвиток СЕВ є досить ймовірною подією: реаніматологія, анестезіологія, гінекологія, хірургія. При цьому найбільш важка ступінь СЕВ розвивається у реаніматологів та анестезіологів. Формування СЕВ у лікарів різних спеціальностей супроводжується підвищенням ймовірності виникнення дефектів МП. При цьому найбільш ймовірним є виникнення дефектів

лікування та ведення документації у анестезіологів, гінекологів, реаніматологів та хірургів. Тут особливо слід виділити спеціальність «реаніматолог» з найбільш високим ризиком виникнення дефектів лікування і дефектів ведення медичної документації.

Ключові слова: дефекти діагностики; дефекти лікування; дефекти організації медичної допомоги; дефекти ведення медичної документації; комісійна судово-медична експертиза; належна медична допомога; синдром емоційного вигорання.

Received by the Editorial Board: 12.06.2019