



Research Journal of Pharmaceutical, Biological and Chemical Sciences

Complex Forensic Medical Estimation Of The Severity Of The Harm Caused To Health At Damages Entailing Mental Disorder.

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ABSTRACT

This article discusses the research findings of forensic medical evaluation of the severity of health damage, which caused mental disorders, based on a synthesis of the forensic medical and forensic psychiatric literature, as well as a retrospective analysis of archival material expert reports and medical records with clinical psychopathology, experimental psychological, mathematical and statistical methods. Moreover, the paper investigated issues of identifying common challenges and problematic questions that occur during forensic examinations while assessing the severity of injury, which caused mental disorders. Additionally, it was aimed to scientifically substantiate the need for a comprehensive approach for solving this problem, as well as developing the expert recommendations for the establishment of the severity of injury health.

Keywords: forensic medicine, forensic examination, forensic psychiatric examination, mental disorder, the severity of injury.

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INTRODUCTION

In the Republic of Kazakhstan, research on forensic evaluation of the severity of injury in case of *damages leading to mental disorders* (DLMD) as a result of unlawful actions, has not been conducted yet. Hence there is no data on the occurrence factors and long-term consequences of such damages (Metelitsa Yu.L., 1988). A methodology of conducting forensic medical examinations to determine the severity of health damage from the injury that caused mental disorders in relation to the legislation of our country is not sufficiently developed. Generally, while determining the presence of a mental disorder and its causal relationship with a certain type of injury, as well as performing a forensic medical assessment of the severity of injury, the practice of separate examination is applied, i.e. a forensic psychiatric examination is appointed first, and then the forensic medical examination of injuries and accompanying mental disorders is performed, which often does not satisfy the law enforcement authorities, ("Instructions for the organization and production of forensic-medical examination". Order Ministry of Health the Republic of Kazakhstan # 368 от 20.05.2010). This practice is somewhat separates the activities of forensic experts and forensic psychiatrists, creating the preconditions for the use of different approaches in determining the etiology of DLMD and their relation to a specific criminally significant situation. This unreasonably prolongs production time of examination, creates certain inconvenience for the law enforcement bodies who have to first appoint a forensic psychiatric examination, and then forensic medical examination.

Despite the existence of separate official instructions, guidelines, manuals and recommendations, there is no unified approach for the determination of the nature and severity of mental dysfunctions in victims of violence and, therefore, the expert criteria for determining the severity of the injury from the DLMD in criminally significant situations are not fully developed (Shlyakhov A.R., 1979, Shishkov S.N., 1996, Shostakovich B.V., 1997).

Thus, the social importance of the studied issue as well as the lack of development of clinical and expert criteria for assessing the severity of injury among victims with mental disorders caused by various injuries make this problem topical.

MATERIALS AND METHODS

The first step of study is based on a retrospective analysis of 33222 «Conclusions of forensics examination» (CF) of the Republican Centre of Forensic Medicine, and 10629 «Acts of outpatient forensic psychiatric expert committee» (OFPEC) for 2011-2015, where 2665 conclusions and 434 examination acts of persons with a head injury were selected by the method of continuous sampling. The information about the validity of clinical diagnosis of concussion and brain contusion were compared with the results of the forensic examination of the victims during the analysis of these documents. At the same time we take into account the medical history information, the circumstances of the incident, the victim's complaint, and set of objective data of clinical and instrumental methods of investigation, indicating the presence or absence of signs of intracranial injury.

The next section of work includes medical records analysis of 225 victims with a head injury received in the criminally significant situation. People who had a history of previous trauma, mental disorders, chronic physical illness, alcoholism, and who also was in alcoholic intoxication in a moment of accident were excluded from the list of investigation.

The main research methods were clinical-psychopathological, experimental psychological, mathematical-statistical methods. In order to examine the victim, a questionnaire was used which included personal history, a part of the characteristic clinical syndromes and diagnosis of mental disorders (by ICD-10), and the results of the social-demographic analysis and clinical questionnaire on neuroticism, (D.M.Mendelevich et al., 1985). The latter one included 68 questions, arranged in descending order of their information and divided into 6 scales: anxiety, depression, fatigue, hysterical type of response, obsessive-phobic disorders and autonomic disorders. Analysis of personal data and their evaluation by 5 point system were carried out with the determination of amount of diagnostic coefficients (DC).

Statistical analysis of all digital information, including the calculation of average values and their standard deviations, Student and Wilkinson criteria, was performed by methods of variation statistics on the

PC using the software such as Statistica 6.0 and Microsoft Excel. Evaluation of reliability of results of social-demographic survey of victims was implemented by using X-square test of Pearson. In order to analyze the structure of mental disorders, methods of multivariate statistics were used.

RESULTS AND DISCUSSION

The analysis of forensic examination conclusions within 2011-2015 indicated that in 33.5% - 51.0% cases of primary medical records of medical institutions, the diagnosis of concussion and brain contusion were not confirmed by forensic experts and has not been subjected to forensic assessment (Table 1).

Table 1. Indicators of diagnosis of intracranial injury on materials of forensic medical and forensic psychiatric examinations

Analyzed indicators	Years				
	2011	2012	2013	2014	2015
1. Total surveyed:					
CF	6038	6674	6989	6806	6715
OFPEC	1537	1909	2304	2416	2463
2. Victims with intracranial injury:					
a) the absolute amount:					
CF	444	508	520	576	617
OFPEC	84	62	80	119	89
б) the relative amount, %:					
CF	7,3	7,6	7,4	8,5	9,2
OFPEC	5,0	3,0	3,2	4,9	3,6
3. Unconfirmed diagnosis of intracranial injury:					
a) the absolute amount:					
CF	160	235	263	193	212
OFPEC	36	29	31	52	33
б) the relative amount, %:					
CF	36	46	51	33,5	34,4
OFPEC	57,1	53,2	61,3	56,3	62,9

Analysis of acts of forensic examinations conducted by Outpatient forensic psychiatric expert committee (OFPEC) showed that more than 50% of cases the diagnosis of various forms of brain injury (or their consequences) is also based on the anamnesis and victims' complaints. The originals of medical records of inpatients and out-patients (less than 10%) were rarely requested and studied. Furthermore, there was no objective clinical evidence which prove the traumatic nature of the identified pathology in a research part of the conclusion. There was not enough attention paid to co-morbidity (abnormal premorbid), which could play a significant role in the clinical picture of pathological conditions. Established facts showed significant deficiencies of used methods of expert assessment of manifestations of intracranial injury.

Studying the 434 acts of forensic psychiatric examination for 2011-2015 years helped us to find objective clinical evidence of intracranial injury in only 181 cases, accounting for 41.7% from the total number of surveyed people with a head injury. It was not uniquely possible to associate complaints of headache, fatigue, sleep disturbances and depressed mood with brain injuries in 58.3% of people subjected to forensic psychiatric examination, due to the fact that some objective clinical symptoms which are indicative of traumatic suffering were not revealed. These facts allow us to conclude that the overdiagnosis of intracranial injury due emphasis on the importance of patients' complaints, the circumstances of the incident and incomplete neurological and instrumental examinations of the victims was common, while the role of the traumatic situation and clinical psychopathology was not taken into account.

The next stage includes the analysis of medical records of victims with head injury. From 6816 victims who have passed forensic examination in the national bureau, there were selected 670 people with various forms of head trauma (9.8%), 225 (33.6%) of them were included to the study by continuous sampling.

Victims were divided by the nature of bodily injury as follows: with soft tissue injuries of the head in the form of abrasions, bruises, superficial wounds - 129 people (57.3%), with a concussion of the brain - 68 people (30.2%) with brain injury brain - 28 people (12.5%). The number of male and female victims is divided relatively evenly (113 and 112 respectively). The majority consisted of persons in the age groups of 20 to 49 years (74.6%).

Survey results of mental health made it possible to divide the victims into three main groups: persons without mental disorders (57 people), with preclinical disorders (55 people), with clinically outlined manifestations of borderline mental disorders (113 people).

The absence of any complaints from the mental sphere and the objective manifestations of mental pathology were characteristic for the *first group of victims*. The results of examination of these people by clinical questionnaire to identify and assess neurotic states have shown that diagnostic rates on all scales are above the threshold of +1.28.

The second group of individuals with preclinical impairment syndromes was characterized by the presence of incomplete mental disorders of psychotic level. During the conversation, the victims usually imposed individual complaints of headaches, episodic nocturnal sleep disturbances, fatigue, and others. However, the attitude of victims to the events of the accident and to the state of his health was characterized by realism and lack of fixed attention to the health. These persons considered themselves as mentally healthy, without waiting for assistance from the doctors, and explained the existing complaints with somatic disadvantages related to the head injury. Examination of these victims by clinical questionnaire confirmed the awaited results of psychopathological analysis. It was common for those people to have similar performance of DC, namely the depression scale were below the threshold ranks - 1.28; the scales of anxiety, obsessive-phobic disorders and autonomic were between +1.28 and -1.28, while the rest of scales has resulted in magnitudes above +1.28, indicating an absence of violations in other spheres of mental activity. Obtained data allowed to distinguish five basic options for pre-clinical mental disorders: depressive - 15, vegetative - 13, phobic - 12, hysterical - 8 and disturbing - 7 people. It should be noted that we identified isolated asthenic disorders in this group of victims, which are the most frequent response of organism to exogenous factors (V.S.Lobzin et al., 1979).

As it was noted in the analysis of the first group of victims, nearly in half of surveyed mental disorders have not been identified, even though they have enrolled in criminal situation and got various types of head injuries. In this context, it seems justified to search for socio-demographic and biological risk factors for the formation of mental disorders in victims of violence due to multifactorial processes (Table 2).

Table 2. Comparative analysis of the socio-demographic characteristics of victims with different levels of mental maladjustment

Socio-demographic characteristics of the surveyed	Groups of victims of mental state					
	Group 1 (non-mental disorders) - 57 people		Group 2 (pre-clinical disorders) - 55 people		Group 3 (clinically-defined disorder) - 113 people	
	Amount	%	Amount	%	Amount	%
1	2	3	4	5	6	7
1. Sex:						
Males	38	66,7*	28	50,9	47	41,6*
Females	19	33,3	27	49,0	66	58,4
2. Education:						

a) incomplete secondary	8	14,0	9	16,4	14	12,4
b) secondary (special)	36	63,1	32	58,2	61	54,0
c) higher	8	14,0	9	16,4	30	26,5
d) incomplete higher	5	8,8	5	9,0	8	7,1
3. Family relationship:						
a) good	51	89,5*	42	76,4	71	62,8*
b) conflict	6	10,5*	13	23,6	42	37,2*
4. Family life satisfaction						
a) yes	51	89,5*	39	71,0	67	59,3*
b) no	6	10,5*	16	29,0	46	40,7*
5. Material security of family						
a) adequate	20	35,1*	19	34,5	22	19,5*
b) satisfactory	32	56,1	28	50,9	51	45,1
c) insufficient	5	8,8*	8	14,6	40	35,4*
6. Relationship of the parents in the family						
a) smooth	56	98,2*	47	85,5	96	85,0*
b) conflict	1	1,8*	8	14,5	17	15,0*
7. Somatic diagnosis						
a) soft tissue damage	35	61,4	29	52,7	65	57,2
b) brain concussion	11	19,2	21	38,2	36	31,9*
c) brain contusion	11	19,2	5	9,1	12	10,6
8. Traumatic situation view						
a) beating	14	24,6	17	30,9	28	24,8
b) beating with robbery	6	10,5	2	3,6	5	4,4
c) beating with insults and threats	20	35,1	15	27,3	50	44,3
d) beating a robbery, insults and mockery	3	5,3	10	18,2	11	9,7
e) autotrauma	8	14,0	7	12,7	7	6,2
f) consumer injury (family)	6	10,5	4	7,3	12	10,6

* - P <0.05 between victims first and third groups.

These facts allow us to conclude that the overdiagnosis of intracranial injury happened due to emphasis on the importance of patients' complaints, the circumstances of the incident and incomplete neurological and instrumental examinations of the victims, while the role of the traumatic situation and clinical psychopathology was not taken into consideration.

Considering the syndromic incompleteness of mental pathology, as well as the lack of effect on physical ability of victims, we believe that pre-clinical mental disorders cannot be assessed by experts to determine the severity of injury.

Analysis of psychiatric symptoms and medical history data of *the victims of the third group* with clinically outlined manifestations of borderline mental disorders made it possible to identify the main syndromes of clinical manifestations of mental disorders (depressive-phobic -36 people, depressive-anxious - 23, asthenic-depressive - 21 anxiety-phobic - 19 and hypochondriac - 14). The results of clinical and psychopathologic surveys also confirmed by clinical questionnaire: DC indicators on all scales, except for the scale of the hysterical type response which were below a threshold value -1.28.

According to the results of socio-demographic survey (Table 2), educational level of the victims is high - more than 2/3 had higher and secondary special education. A considerable part of surveyed people had good living conditions and normal relations in the family (69.8 - 72.9%). Material security of most of them was considered to be sufficient in 27.1%, satisfactory - in 49.3%, poor - in 23.6% of cases. The majority of victims (80.5%) were raised in an intact family. Thus, social and demographic indicators of examined people show that most victims belong to the category of people with high socio-residential and professional status (Table 2). At the same time, among the victims with mental disabilities, women were encountered more frequently, approximately 1.75 times more frequent ($P < 0.002$). Furthermore, the relationship between age of examined people and the frequency of their borderline mental disorders were not observed.

The educational qualifications of the victims with mental disorders was higher ($P < 0.05$). Work experience in the profession did not play a significant role in the genesis of mental disorders among the victims, as well as their marital status and living conditions. At the same time, factors such as the psychological climate in the family and family life satisfaction, have a significant impact on the possibility of the formation of mental disorders among victims ($P < 0.001$). The 35.4% of victims with mental disabilities rated their financial situation as unsatisfactory, while the proportion of victims without mental disorders with inadequate material support turned out to be 8.8% ($P < 0.05$). Number of children in the families of the victims was not significant for the analysis, although among the people with mental disorders there are more common families with one child and three times less - with three or four children. Features of early childhood development (neuropathic features) and also the composition of the parent family had no significant effect on the formation of mental disorders in victims. Conflicts in the parental home in the people with mental disabilities have met eight times more likely than people without mental disorders ($p < 0.001$). Also, the nature of head trauma (damage soft tissue injury or concussion of the brain) and variations of criminal situations, had no significant effect on the incidence of mental disorders. These facts indicated that the occurrence of mental disorders is largely due to personal-typological characteristics of the victims, their perceptions and attitudes towards the criminal situation.

CONCLUSION

Thus, according to the conducted research it can be assumed that the methodologically justified approach to the determination of the severity of injury in trauma accompanied by a mental disorder, is the stepwise implementation of a comprehensive forensic psychiatric and forensic expertise with joint participation of specialists at each stage. Whereas the expert assessment of the severity of injury in case of damage, which caused mental disorders, should include a definition of nosology, as well as the qualification of severity, depth and duration of mental disorders, while taking into account the nature of somatic (physical) damage.

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