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**THE INTERRELATION  
OF EMOTIONAL COMBUSTION WITH PERSONAL FEATURES  
(on the example of employees of the fire service of the Republic of Kazakhstan)**

This article is devoted to an empirical study of the relationship between emotional burnout and personal characteristics of employees of the fire service of the Republic of Kazakhstan. The work of the employees of the firefighting service of the CoES of the Republic of Kazakhstan refers to the types of professional activity, the distinguishing feature of which is a constant confrontation with the danger. The methodological basis of the study was the three-component model of Maslach & Jackson. In modern scientific understanding, the specificity and uniqueness of the burnout syndrome is related to the symptoms of emotional exhaustion, depersonalization (cynicism) and reduction of personal achievements. Also, burnout includes a number of symptoms manifested in the cognitive and motivational spheres of the individual, in behavior and physical condition – common for these symptoms is their maladaptiveness. The purpose of the study was to study the relationship between emotional burnout and personal characteristics of employees of the fire service of the Republic of Kazakhstan. Methods of research – Maslach Burnout questionnaire, R. McCrae and P. Costa five-factor personal questionnaire and Tomsk G.V. Zalewskirigidity questionnaire (short TRQZ). The results of the study revealed a low level of emotional burnout in firefighters, the formation of individual burn-out phases. It is established that 43% of firefighters have a high level of reduction of professional achievements. The profile of the qualities necessary for fire department work is defined – adaptability, ability to work in a team, self-control, moderate rigidity. The results obtained can be used for professional selection and social and psychological support of personnel.

**Key words:** personal characteristics of firefighters, emotional burnout, stressful impact, social and psychological support.

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**Эмоциялық жанудың жеке ерекшеліктермен байланысы  
(Қазақстан Республикасының өрт сөндіру қызметінің қызметкерлері мысалында)**

Бұл мақала Қазақстан Республикасының өрт сөндіру қызметі қызметкерлерінің эмоциялық жануы мен жеке ерекшеліктері арасындағы қарым-қатынасты эмпирикалық зерттеуге арналған, ҚР ТЖК өрт сөндіру қызметі қызметкерлерінің еңбегі қауіп-қатермен үнемі ұшырасатын

кәсіби қызмет түрлеріне жатады. Зерттеудің әдіснамалық негізі Маслач пен Джексонның үш компоненттік моделі арқылы жүрді. Заманауи ғылыми түсініктерде жану синдромының спецификасы мен ерекшелігі эмоциялық сарқылудың симптомдарына, деперсонализация (цинизмге) және жеке жетістіктерге байланысты. Сонымен қатар жанудың адамның когнитивтік және мотивациялық салаларында көрініс табуы, мінез-құлқы мен физикалық жағдайында пайда болатын бірқатар белгілері бар. Зерттеудің мақсаты Қазақстан Республикасының өртке қарсы қызметі қызметкерлерінің эмоциялық күйзелісі мен жеке сипаттамалары арасындағы қатынасты зерттеу болды. Зерттеудің әдістері – Жану сауалнамасы (күю) Маслач (ағылшын тілінде Maslach-BurnoutInventory, қысқартылған MBI), бесфакторлы жеке сауалнама Р. МакКрае мен П. Коста және томск ригидті сауалнамасы Г.В. Залевский (сокр. ТОРЗ). Зерттеу нәтижелері өрт сөндірушілерде эмоциялық жанудың төмен деңгейін, жекелеген күйік фазаларын қалыптастыруды анықтады. Өрт сөндірушілердің 43% кәсіптік жетістіктер деңгейінің төмендеуіне ие екендігі анықталды. Өрт бөлімі жұмысына қажетті қасиеттер – бейімделу қабілеті, командада жұмыс істеу қабілеті, өзін-өзі бақылау, қалыпты қатаңдық. Алынған нәтижелер кадрларды кәсіби іріктеу және әлеуметтік-психологиялық қолдау үшін пайдаланылуы мүмкін.

**Түйін сөздер:** өрт сөндірушілердің жеке ерекшеліктері, эмоциялық жану, стресстік әсер, әлеуметтік және психологиялық қолдау.

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### **Взаимосвязь эмоционального выгорания с личностными особенностями (на примере сотрудников противопожарной службы Республики Казахстан)**

Данная статья посвящена эмпирическому исследованию взаимосвязи эмоционального выгорания с личностными особенностями у сотрудников противопожарной службы РК. Труд сотрудников противопожарной службы КЧС РК относится к видам профессиональной деятельности, отличительной особенностью которой является постоянное столкновение с опасностью. Методологическим основанием исследования выступила трехкомпонентная модель Maslach&Jackson. В современном научном понимании специфичность и уникальность синдрома выгорания заключаются в связанности симптомов эмоционального истощения, деперсонализации (цинизма) и редукции личных достижений. Также к выгоранию относят целый ряд симптомов, проявляющихся в когнитивной и мотивационной сферах личности, в поведении и физическом состоянии – общим для этих симптомов является их дезадаптивность. Цель исследования состояла в изучении взаимосвязи эмоционального выгорания с личностными особенностями сотрудников противопожарной службы РК. Методы исследования – Опросник выгорания (перегорания) Маслач, пятифакторный личностный опросник Р. МакКрае и П. Коста и томский опросник ригидности Г.В. Залевского (сокр. ТОРЗ). По результатам исследования был выявлен низкий уровень эмоционального выгорания у пожарных, сформированность отдельных фаз выгорания, а у 43% наблюдается высокий уровень редукции профессиональных достижений. Определен профиль качеств, необходимых для работы пожарным – адаптивность, умение работать в команде, самоконтроль, умеренная ригидность. Полученные результаты могут использоваться при проведении профессионального отбора и социально-психологическом сопровождении личного состава.

**Ключевые слова:** личностные особенности пожарных, эмоциональное выгорание, стрессовое воздействие, социально-психологическое сопровождение.

## **Introduction**

In recent years, the problems of organizing social and psychological support in the service of the Committee of Emergency Situations, in particular, in firefighting, are becoming increasingly important in our country. Today 422 fire departments of the

state fire service are engaged in fire protection in Kazakhstan (Tolegenova, 2014; Tolegenova, 2007).

As we know, the profession of firefighters is one of the most dangerous occupations characterized by constant traumatic situations occurring under extreme conditions, connected with risk to life, time deficit. Professional activities of firefighters

are also associated with great physical and mental stress caused by the responsibility for life and health of people. So, according to the report «About the results of the activities of civil protection bodies for 2016», the fire extinguishing service of the RK 13,517 trips to fires were committed, to incineration cases, which are not recorded as fires – 27,301 trips (Bakirova, 2012).

Constant stressful actions and a constant readiness for risk lead to serious stresses on the adaptive capabilities of the body to constantly acting sources of stress.

Such pronounced psychotraumatic factors that constantly accompany firefighters in the course of their professional activities lead to physical and psychoemotional fatigue. In connection with what is especially relevant is the study of emotional burnout of firefighters and their connection with personal characteristics.

### Formulation of the problem

The complexity of researching the problem of emotional burnout of employees of fire departments of the CoES of the Republic of Kazakhstan is largely determined by the fact that these services are closed structures. Despite the presence of a regular psychologist unit and the need for psychological support, they are not ready to interact with psychologists and, especially, to external assessments of the professional competence of specialists (Ivkina, 2016). Nevertheless, it is these structures of the CoES that need the organization of social and psychological support, the introduction of modern technologies for psychological support and support of professional activities of firefighters, and educate employees about the importance and need for timely receipt of psychological assistance (Shevchenko, 2013).

### Purpose of the study

The aim of the study is to study the relationship between emotional burnout and personal characteristics of employees of the fire service of the Republic of Kazakhstan.

In the course of the study, 3 main targets for diagnosis were identified:

1) *Emotional burnout*:

- emotional exhaustion
- depersonalization
- reduction of professionalism (Vodopyanova, 2008)

2) *Stiffness*:

- general rigidity
- actual rigidity
- sensitive rigidity
- installation rigidity
- stiffness as a condition
- premorbid rigidity (Khromov, 2000)

3) *Fundamental factors*:

- extra version – introversion
- attachment – Isolation
- self-control-impulsivity
- emotionality – restraint
- expressiveness – practicality (Workshop on the psychology of personality: Teaching-methodical manual, 2006).

### Methodology and methods of research

As a research methodology, the three-component of Maslach & Jackson (Maslach, Jackson, 2001) model was chosen. In modern scientific understanding, the specificity and uniqueness of the burnout syndrome is related to the symptoms of emotional exhaustion, depersonalization (cynicism) and reduction of personal achievements. Also, burnout includes a number of symptoms manifested in the cognitive and motivational spheres of the individual, in behavior and physical condition – common for these symptoms is their maladaptiveness.

A.V. Boldyrev, T.A. Boldyreva (2015) in the course of a large-scale study (more than 600 respondents) identified the main markers of emotional burnout:

1. The object of labor loses its appeal.
2. The behavior of a specialist does not depend on the characteristics of professional interaction, there is a detachment from the relations in the team.
3. Personal happiness, emotional comfort are taken out of work, profession (Boldyrev, 2015).

N.I. Vlach (Vlach, 2015) among external factors of risk of emotional exhaustion and decrease in professional activity allocates such markers as:

1. Tense emotional activity.
2. Destabilizing organization of activities: fuzzy organization and planning of work, lack of equipment, poorly structured and vague information, presence of «bureaucratic noise» in it.
3. Increased responsibility for the performed functions.
4. An unfortunate psychological atmosphere is determined by the potential conflictuality of interactions «vertically» (in the «leader-subordinate» system) and «horizontally» (in the «colleague-colleague» system).

5. Psychologically difficult contingent (Vlach, 2015).

These methods were used In conducting an applied empirical study: The survey of combustion (burning out) by Maslach Burnout Inventory, shortly (MBI) (Vodopyanova, 2009), five-factor personal survey by P.Mac Kray and P.Kosta (Khromov, 2000), Tomsk survey of rigidity G.V. Zalevsky (short. TRQZ) (Workshop on the psychology of personality: Teaching-methodical manual, 2006).

Modern studies of the relationship between the state of mental burnout and individual personal characteristics in firefighters pointed to such determinants as fatigue and detachment (Basinska, Wiciak, 2012); weak control over emotions (Bakirova, 2012); (Dobson, Choi1, Schnall1, Israel1, Baker, 2011); emotional intelligence (Couper, 2013); depression (Bianchi, Schonfeld, Laurent, 2015); (Schonfeld, Bianchi, 2016), neuroticism, depressiveness, shyness; emotional lability (Karamova, Khusainova, 2016); insufficient formation of Ozna self (Molchanova, Kuznecov, 2016).

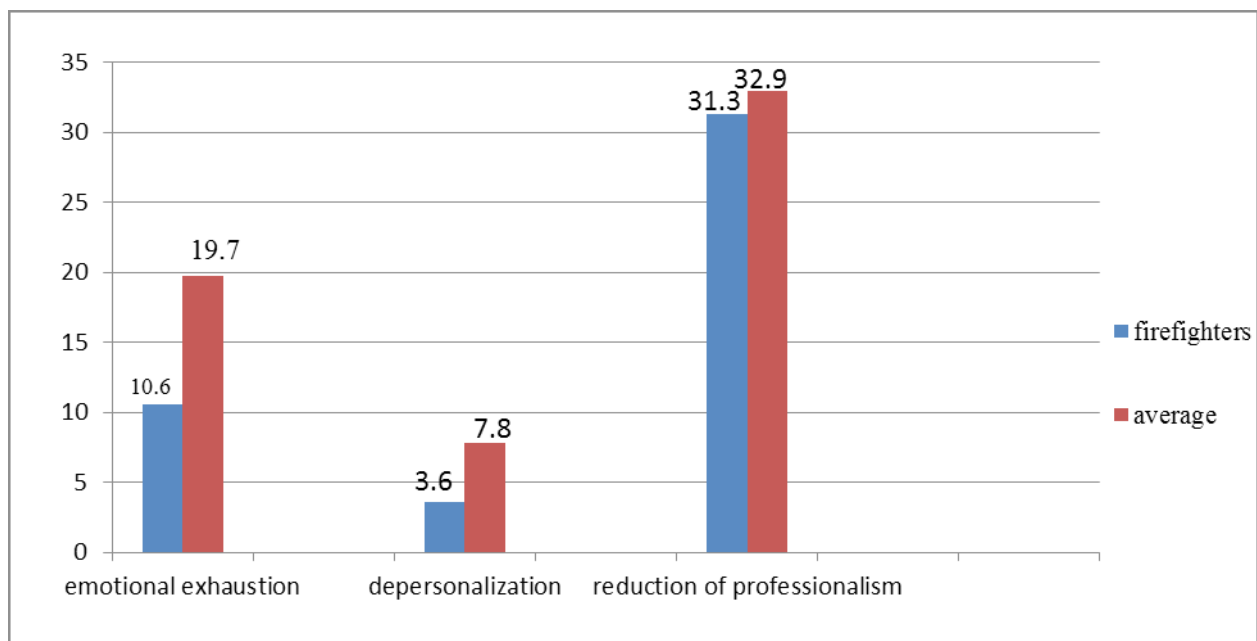
When conducting the applied empirical study, the following methods were used: Maslach Burnout Inventory (MBI) (Maslach, Jackson, 2001), R. McCrae and P. Costa five-factor personal questionnaire (Khromov, 2000) and Tomsk G., Zalewski A. rigidity questionnaire (short TRQZ) (Workshop on the psychology of personality: Teaching-methodical manual, 2006).

The group of methods for quantitative and qualitative data processing included descriptive statistics, correlation analysis (tau-b Kendall), and the interpretation method.

**Main part**

The total sample size of the survey participants included 65 firefighters of the State Firefighting Service of the Republic of Kazakhstan (Almaty) males, aged 19 to 49 (mean age 31 years) with a professional experience of six months to 23 years (8 years of average work experience ). 32% of firefighters have higher education, 68% have secondary education, 57% of firefighters are not married, 42% are married, 1% are divorced. 74% of the chosen ones are Kazakhs, 20% are Uighurs, 6% are from other ethnic groups (Russians, Uzbeks, Tatars).

Analysis of the average values of the indicators on the S. Maslach questionnaire of emotional burnout showed a low level of severity of indicators (see Fig.1): «emotional exhaustion» – Xsr. = 10.6 (low level L), «depersonalization» – Xsr. = 3.6 (low level L); «Reduction of professionalism» – Xsr. = 31.3 (mean level of M). Thus, the emotional burnout of firefighters is at a low level, changes are noted in violation of the degree of satisfaction of firefighters as a person, as a professional, which leads to a decrease in professional motivation and a tendency to relieve themselves from responsibility.



**Figure 1** – Level of emotional burnout of firefighters

The results of our study do not coincide with the results of similar studies of recent years (Koshmarova, 2014; Pavlova, 2014; Molchanova,

2016), according to which firefighters experience an average and pronounced state of mental burnout (Koshkarov, 2014; Pavlova, 2014; Leonova, 2001).

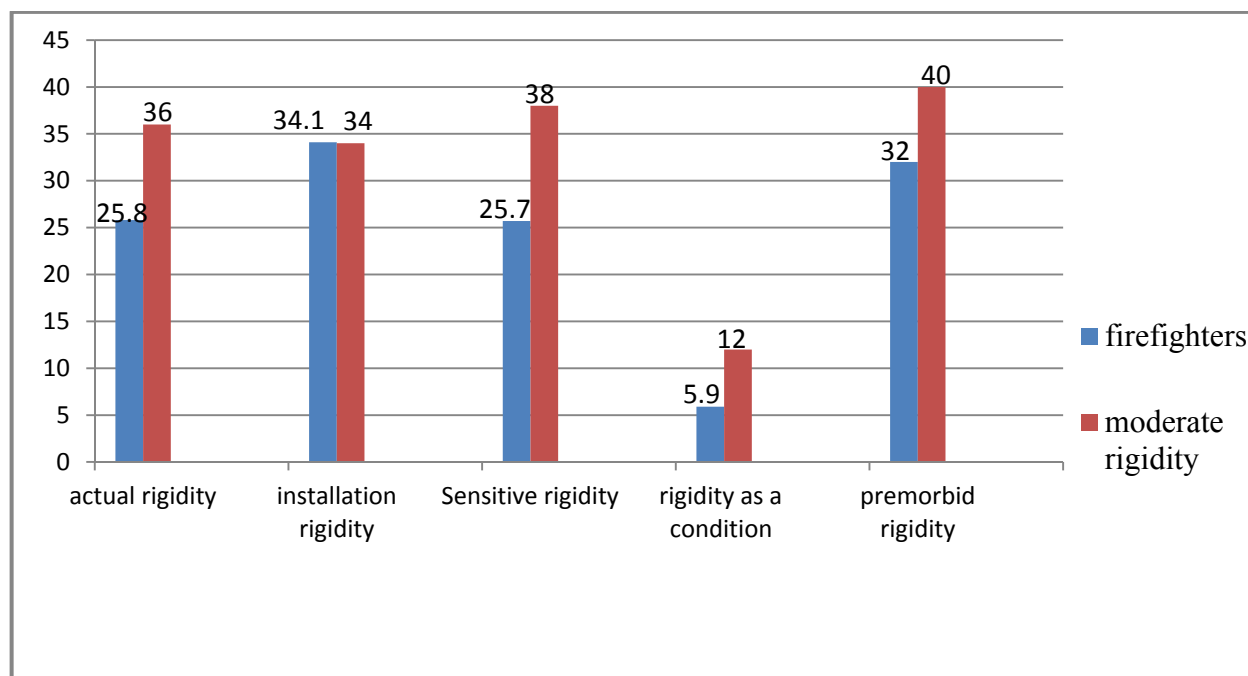


Figure 2 – Level of firefighters' rigidity

Assessment of firefighters' rigidity was carried out with the help of the Tomsk Zalevsky rigidity questionnaire, who showed a moderate severity of the symptomatic rigidity:  $X_{av.} = 119.2$  (see Figure 2): «actual rigidity»  $X_p = 25.8$  (moderate level of rigidity), «set rigidity»  $X_{sr} = 34.1$  (moderate level of rigidity, 57% high level of rigidity), «sensitive rigidity»  $X_{sr} = 25.7$  (moderate level of rigidity), «stiffness as a condition»  $X_r = 5.9$  (low rigidity) and «premorbid rigidity»  $X_r = 32.2$  (moderate level of rigidity).

As we can see, according to the set rigidity, the indices are slightly higher than the norm; however, attention is drawn to the fact that 57% have a high level of rigidity.

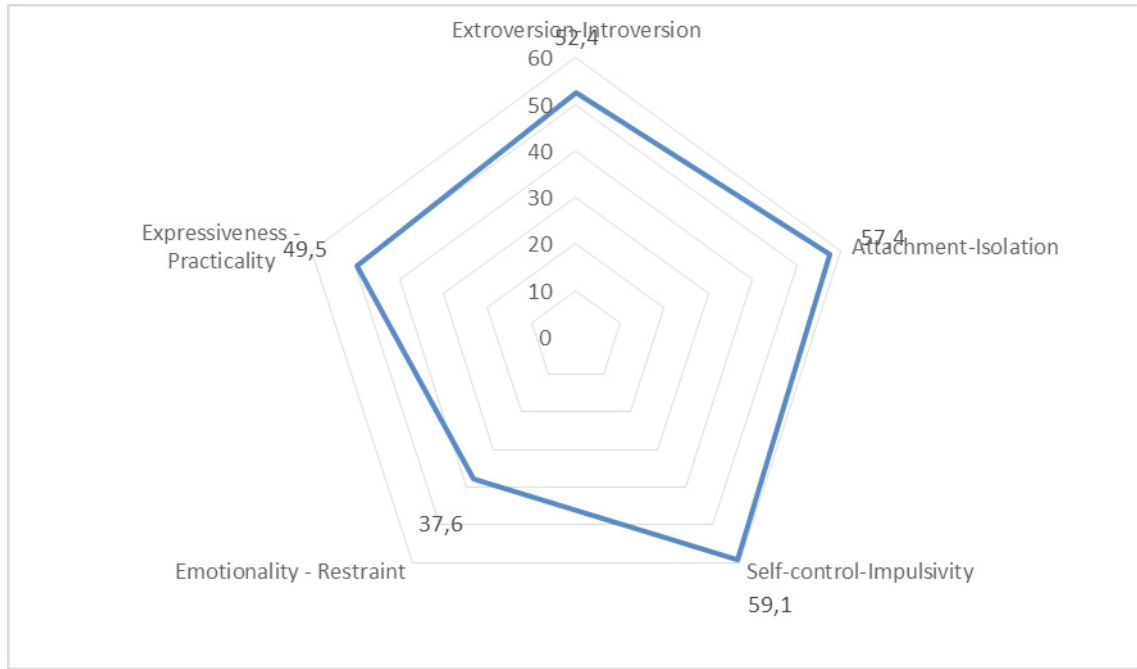
The evaluation of the fundamental factors was carried out using the R. McCrae and P. Costa five-factor personal questionnaire. The profile obtained in the course of the study shows (see Fig.3): «Extroversion – Introversion»  $X_p = 52.4$  (high level), «Attachment – Isolation»  $X_p = 57.4$  (high

level), «Self-control-Impulsiveness»  $X_{sr} = 59.1$  (high), «Emotionality – Restraint»  $X_p = 37.6$  (low) and «Expressiveness – Practicality»  $X_{dr} = 49.5$  (medium level).

Thus, firefighters are characterized by sociability, optimism, positive attitude towards people, conscientiousness, responsibility, self-sufficiency, realism and a moderate interest for the new, so called changes.

The correlation analysis of emotional burnout relationships with personal characteristics of the employees of the fire service of the RK is presented in Table 1 – with aspects of rigidity and five personal factors.

As can be seen from the data presented in Table 1, highly significant correlation relationships between the positive and negative directionality of the moderate, medium and strong degree of severity between emotional burnout and personal characteristics of the employees of the fire service of the Republic of Kazakhstan were revealed.



**Figure 3** – Profile of the main personal factors of firefighters

**Table 1** – The relationship of emotional burnout to personal characteristics of employees of the fire service of the Republic of Kazakhstan

	Emotional exhaustion	Depersonalization	Reduction of professionalism
Generalrigidity	0,314**	0,179*	
Currentrigidity		0,173*	
Sensitiverigidity	0,176*		
Constrainedrigidity			0,183*
Rigidityas a condition		0,225*	
Premorbidrigidity	0,222**		
Attachment – Isolation		-0,356**	0,229**
Self-control-Impulsivity		-0,182*	0,164*
Emotionality – Restraint	0,184*		

Note: \* – statistical significance for  $p \leq 0.05$ ;  
 \*\* – statistical significance for  $p \leq 0.001$ .

«Emotional exhaustion» is associated with four positive correlations with such personality traits as «general rigidity» ( $r=0.314^{**}$ ), «sensitive rigidity» ( $r=0.176^{*}$ ), «premorbid rigidity» ( $r=.222^{**}$ ) and «emotionality -retainability» ( $r=0.184^{*}$ ). That is, the expressiveness of firefighters such qualities as weak control of emotions, fear of a new one, difficulties in the situation of changes, pedantry,

obsession will contribute to the development of a decrease in tonus, increased mental exhaustion, affective lability in the course of professional activity. These indicators are important to take into account at the stage of training firefighters and their selection in the team, since premorbid rigidity is set by the basic personality traits and is not subject to psychological correction.

«Depersonalization» is associated with 5 correlations of personality traits: 3 positive correlations with total rigidity «(r = 0.179 \*)», actual rigidity «(r = 0.173 \*) and» rigidity as a state «(r = 0.225 \*\*) and 2 negative correlations «attachment-isolation» (r = -0,356 \*\*) and «self-control-impulsiveness» (r = -0,182 \*).

That is, the expressiveness of firefighters such qualities as pedantry, obsession, inability to change opinions, attitudes, propensities in stress to react with fixed patterns of behavior, independence, isolation, low self-control behavior will form a negative and cynical attitude to work.

«Reduction of professionalism» is associated with three positive correlations with such personal characteristics as «set rigidity» (r = 0,183 \*), «attachment-isolation» (r = 0,229 \*\*), «self-control-impulsiveness» (r = 0.164 \*).

That is, the expressiveness of firefighters such qualities as a pronounced attitude toward non-acceptance of new, independence, independence, isolation, inclination to rash acts and low self-control will help to reduce professional motivation, increase negativism in terms of official duties, a tendency to relieve responsibility and avoid work first psychologically, and then physically.

As we can see, the profile of the qualities necessary for firefighters' work includes – adaptability, teamwork, self-control, moderate rigidity.

Thus, the symptoms of emotional burnout are related to the personal characteristics of firefighters. The lack or inadequate development of professionally important psychological qualities contributes to the formation of the syndrome of emotional burnout and a decrease in the

effectiveness of professional activity of specialists in extreme conditions.

## Conclusion

The study of the relationship between emotional burnout and personal characteristics of employees of the fire service of the RK made it possible to formulate the following conclusions:

1. Weak control of emotions, fear of the new, difficulties in the situation of change, pedantry, obsession with firefighters leads to a decrease in tone, increased mental exhaustion and affective lability.

2. Pedantry, obsession, inability to change opinion, attitudes, propensity to react in response to fixed patterns of behavior, independence, isolation, firefighters' low self-control of behavior form a negative and cynical attitude to work.

3. The installation of non-acceptance of new, independence, isolation, a tendency to rash actions and firefighters 'low self-control helps to reduce professional motivation, increase negativism in relation to official duties, a tendency to relieve themselves from responsibility.

4. The profile of the qualities necessary for firefighters' work is defined: adaptability, ability to work in a team, self-control, moderate rigidity.

The obtained results of the research can be used in the practice of psychological support for personnel in the professional selection and training of firefighters, as well as in the development of a program of social and psychological support for firefighters in overcoming and preventing the negative consequences of occupational stress and emotional burnout.

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