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## ASSESSMENT OF THE STATE OF ANXIETY AND DEPRESSION AMONG DOCTORS OF THE AMBULANCE STATION OF THE EAST KAZAKHSTAN REGION

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### Abstract

**Introduction.** The psychoemotional state of health among medical workers is a serious problem all over the world. Ambulance doctors are particularly affected, which can affect the quality of medical care and the outflow of specialists.

Medicine recognizes emotional burnout as a threat to the quality of patient care and the quality of life of doctors. This problem exists throughout medicine, but is especially common in emergency medicine.

**Objective:** To analyze anxiety and depression among medical workers of the ambulance station of the East Kazakhstan region.

**Methodology:** A cross-sectional study was conducted among medical workers of the ambulance station of the East Kazakhstan region. The study was attended by doctors of the ambulance station of the East Kazakhstan region. To assess and analyze anxiety and depression, we used online and offline questionnaires using an adapted hospital scale of anxiety and depression among emergency medical station doctors.

The age profile of the participants was generalized by calculating the average age and interquartile range in years. Categorical variables, including general characteristics of participants (gender, marital status, level of education, employment), knowledge about the level of anxiety and depression among AS medical workers, were summarized using frequencies and percentages.  $P < 0.05$  were considered statistically significant.

**Results:** In total, 320 medical workers of the AS of the East Kazakhstan region were included in the study. Medical workers noted that during the current pandemic and outbreaks of diseases, they experience external and internal tension, accompanied by a sense of sudden panic, the presence of slowness in work and lack of a sense of cheerfulness, some even stop paying attention to their external working appearance. Only a small number of medical workers are satisfied with their work, attributing this to the fact that their affairs (occupations, hobbies) bring them a sense of satisfaction no longer to the same extent as before.

**Conclusion:** The state of anxiety and depression among medical professionals and its subsequent detrimental impact on individuals (psychological, physiological and social), patients and organizations remain a global problem that requires immediate attention.

**Key words:** ambulance station, ambulance, medical workers, anxiety, depression.

### Резюме

## ОЦЕНКА СОСТОЯНИЯ ТРЕВОГИ И ДЕПРЕССИИ У ВРАЧЕЙ СТАНЦИИ СКОРОЙ МЕДИЦИНСКОЙ ПОМОЩИ ВОСТОЧНО-КАЗАХСТАНСКОЙ ОБЛАСТИ

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**Актуальность.** Психоэмоциональное состояние здоровья среди медицинских работников является серьезной проблемой во всем мире. Особенно страдают врачи скорой помощи, что может повлиять на качество медицинской

помощи и отток специалистов.

Медицина признает эмоциональное выгорание угрозой качественному уходу за пациентами и качеству жизни врачей. Эта проблема существует во всей медицине, но особенно распространена в неотложной медицине.

**Цель.** Провести анализ тревожности и депрессии среди медицинских работников станции скорой медицинской помощи Восточно-казахстанской области.

**Материалы и методы исследования.** Проведено поперечное исследование среди медицинских работников станции скорой медицинской помощи Восточно-казахстанской области. В исследовании приняли участие врачи станции скорой медицинской помощи Восточно-казахстанской области. Для оценки и анализа тревоги и депрессии, мы использовали онлайн и оффлайн анкетирование с помощью адаптированной госпитальной шкалы тревоги и депрессии среди врачей станции скорой медицинской помощи.

Возрастной профиль участников был обобщен путем расчета среднего возраста и межквартильного диапазона в годах. Категориальные переменные, включая общие характеристики участников (пол, семейное положение, уровень образования, занятость), об уровне состояния тревожности и депрессии у медицинских работников ССМП, были суммированы с использованием частот и процентов.  $P < 0,05$  считались статистически значимыми.

**Результаты.** Всего в исследовании было включено 320 медицинских работников ССМП Восточно-казахстанской области. Медицинские работники отмечали, что во время текущей пандемии и вспышек заболеваний испытывают внешнее и внутреннее напряжение, сопровождающееся чувством внезапной паники, присутствием медлительности в работе и отсутствием чувства бодрости. Некоторые даже перестают обращать внимание на свой внешний рабочий вид. Лишь небольшое количество медицинских работников удовлетворены своей работой, связывая это с тем, что их дела (занятия, увлечения) приносят им чувство удовлетворения уже не в той степени, как раньше.

**Выводы** Состояние тревожности и депрессии среди медицинских работников и его последующее пагубное воздействие на отдельных лиц (психологическое, физиологическое и социальное), пациентов и организации остаются глобальной проблемой, требующей немедленного внимания.

**Ключевые слова:** станция скорой медицинской помощи, скорая помощь, медицинские работники, тревога, депрессия.

Түйіндеме

## ШЫҒЫС ҚАЗАҚСТАН ОБЛЫСЫНЫҢ ЖЕДЕЛ МЕДИЦИНАЛЫҚ ЖӘРДЕМ СТАНЦИЯСЫНЫҢ ДӘРІГЕРЛЕРІНДЕ МАЗАСЫЗДЫҚ ПЕН ДЕПРЕССИЯНЫ БАҒАЛАУ

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**Кіріспе.** Медицина қызметкерлері арасындағы психосоциалды денсаулық жағдайы бүкіл әлемде маңызды мәселе болып табылады. Жедел жәрдем дәрігерлері әсіресе зардап шегеді, бұл медициналық көмектің сапасына және мамандардың кетуіне әсер етуі мүмкін.

Медицина күйіп қалуды пациенттерге сапалы күтім жасау және дәрігерлердің өмір сүру сапасына қауіп төндіреді деп таниды. Бұл мәселе барлық медицинада бар, бірақ әсіресе жедел жәрдемде жиі кездеседі.

**Мақсаты:** Шығыс Қазақстан облысының Жедел медициналық жәрдем станциясының медицина қызметкерлері арасында мазасыздық пен депрессияға талдау жүргізу.

**Материалдар мен әдістер:** Шығыс Қазақстан облысының Жедел медициналық жәрдем станциясының медицина қызметкерлері арасында көлденең зерттеу жүргізілді. Зерттеуге Шығыс Қазақстан облысының Жедел медициналық жәрдем станциясының дәрігерлері қатысты. Мазасыздық пен депрессияны бағалау және талдау үшін біз жедел жәрдем станциясының дәрігерлері арасында бейімделген ауруханалық мазасыздық пен депрессия шкаласы арқылы онлайн және офлайн сауалнаманы қолдандық.

Қатысушылардың жас профилі орта жастағы және квартильаралық диапазонды есептеу арқылы жинақталды. Қатысушылардың жалпы сипаттамаларын (жынысы, отбасылық жағдайы, білім деңгейі, жұмыспен қамтылуы), ЖМЖС медицина қызметкерлеріндегі мазасыздық пен депрессия деңгейі туралы білімді қоса алғанда, категориялық айнымалылар жиіліктер мен пайыздарды пайдалана отырып жинақталды.  $P < 0,05$  статистикалық маңызды болып саналды.

**Нәтижелері:** Зерттеуге Шығыс Қазақстан облысының ЖМЖС-ның 320 медицина қызметкері енгізілді. Медицина мамандары қазіргі пандемия мен аурудың өршуі кезінде кенеттен дүрбелең сезімімен, жұмыста

баяулықтың болуымен және сергектік сезімінің болмауымен бірге жүретін сыртқы және ішкі шиеленісті сезінетінін атап өтті, кейбіреулері тіпті сыртқы жұмыс түріне назар аударуды тоқтатады. Медицина қызметкерлерінің аз ғана бөлігі өз жұмысына қанағаттанады, мұны олардың істері (кәсіптері, хоббиі) оларға бұрынғыдай емес дәрежеде қанағаттану сезімін беретіндігімен байланыстырады.

**Қорытынды:** Медицина қызметкерлері арасындағы мазасыздық пен депрессия жағдайы және оның жеке адамдарға (психологиялық, физиологиялық және әлеуметтік), пациенттер мен ұйымдарға кейінгі зиянды әсері жедел назар аударуды қажет ететін жаңандық мәселе болып қала береді.

**Негізгі сөздер:** жедел медициналық жәрдем станциясы, жедел жәрдем, медицина қызметкерлері, мазасыздық, депрессия.

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#### **Introduction.**

Mental health is one of the three main aspects of the overall health of both individuals and communities. An important consideration is the mental health of healthcare workers (MR), since it can directly affect the quality of their work and, consequently, the quality of care provided to patients [6]. According to the CDC, health workers include all hospital workers who have potentially been exposed to infectious agents transmitted from other workers or patients [24]. The mental health of workers in general and medical workers in particular may gradually deteriorate due to prolonged exposure to a stressful work environment. Long-term stress in doctors and other medical professionals is closely associated with an increase in job dissatisfaction, loss of professional qualities and decreased productivity [14]. This can have serious consequences both for the health of workers and for the quality of their care. Moreover, overwork of one employee can negatively affect everyone in his immediate work environment, creating the so-called "domino effect". This is especially noticeable in medical institutions where large interdisciplinary teams work, such as the intensive care unit (ICU), where the effectiveness of medical workers largely depends on the work of the team [3]. A higher percentage of emotional exhaustion among team members negatively affects interpersonal teamwork and, consequently, jeopardizes patient care [17, 18]. Currently, the spread of the new coronavirus is considered the main source of uncertainty, fear and anxiety for many health workers around the world, affecting their physical and psychological health in various ways [12]. The position of medical workers at the forefront in the fight against the current pandemic requires physical and mental strength to overcome new and unknown challenges. One axis by which mental health is usually assessed is stress, anxiety and depression. This is due to the fact that when these symptoms appear in a doctor or a medical professional,

they can have serious consequences for the quality of care provided. This may be due to a compromised relationship between the patient and the doctor, or even medical errors [4]. In addition, prolonged anxiety and stress can also provoke more severe pathological phenotypes, such as emotional burnout; a state of physical and mental exhaustion. Among doctors, burnout is usually caused by unfavorable working conditions, including a long working day, enormous pressure and a high level of responsibility, which can either be aggravated or prevented by other environmental factors [5]. Burnout of doctors and nurses has been repeatedly mentioned as a factor threatening patient care [2, 9, 11, 13, 15]. Even worse, recovery from emotional burnout is not an easy process. The reported risk of burnout leads to a vicious causal feedback loop with decreased productivity, spreading the damage caused by stress to the medical professional [20, 21]. Thus, the state of mental health of all health workers at any given time must be carefully monitored, and any observed pathologies should be promptly eliminated [6].

**Aim.** To analyze anxiety and depression among medical workers of the ambulance station of the East Kazakhstan region.

#### **Materials and methods**

**Design and research area.** A cross-sectional study was conducted among medical workers of the ambulance station (AS) of the East Kazakhstan region in the period from June to September 2022.

The study involved doctors of the ambulance station of the East Kazakhstan region. To assess and analyze anxiety and depression, we used online and offline questionnaires using the adapted hospital scale of anxiety and depression HADS among emergency medical station doctors. The questionnaire included 58 questions and consisted of several blocks to assess anxiety and depression, the severity of insomnia and quality of life. This study presents

the results of a questionnaire to assess the state of anxiety and depression in AS medical workers. The questionnaire consisted of 14 questions.

In total, 320 medical workers of the AS of the East Kazakhstan region took part in the study in the study.

**Data collection tool and procedure.** In addition to general and demographic characteristics such as age, gender, place of residence and marital status, other variables such as employment and education level were taken into account. Knowledge about the level of anxiety and depression among AS medical workers was assessed using questions adapted from the approved HADS questionnaire used in a survey conducted in several countries [23].

The questionnaire consisted of four sections. The first section includes socio-demographic data of respondents. The second section included questions on assessing the severity of insomnia. The third section included questions on the scale of professional and life qualities and the fourth section included questions on assessing the level of anxiety and depression.

The tool used was developed in kazakh and russian. The time for completing the questionnaire ranged from 20 to 60 minutes. The objectives of the study were clearly explained to participants prior to data collection.

The confidentiality of the respondents was ensured by the fact that the questionnaire did not ask for their identification information, such as name, employee identification number. We used all data for research purposes and it was encrypted and stored electronically in a secure location with a password used by the principal investigator to ensure confidentiality. Informed consent was obtained from each participant and then a structured questionnaire was distributed to collect all data.

**Ethical considerations.** Ethical permission for this study was obtained by the Semey Medical University Ethics Committee. Permission to conduct the study was obtained from the participants prior to the interview.

**Data analysis.** The data was entered into the database and cleaned before being checked for completeness. The data were then analyzed using the Statistical Package for the Social Sciences (SPSS) version 20. The age profile of the participants was summarized by calculating the mean age and interquartile range in years. Categorical variables, including participants' general characteristics (gender, marital status, educational level, employment), anxiety and depression questions, were summarized using frequencies and percentages.  $P < 0.05$  were considered statistically significant.

## Results.

Of the 320 respondents who took part in the study, 95 (29,6%) were men and 225 (70,4%) were women. The average age of the participants was 37 years. The majority of participants, 266 (83.1%), had a secondary education, 54 (16.9%) had a higher education. Information about the level of anxiety is presented in Table 1.

Respondents in the questionnaire noted which of the listed answer options corresponds to their state at the time of the survey. The list contained status questions to assess the level of depression. Each statement corresponded to 4 answer options (Table 2).

Table 1.

### Information about the level of anxiety (n=320).

Anxiety level	Frequency (%)
<b>1. I'm feeling stressed, I'm not feeling well</b>	
all time	13 (3,9)
often	30 (9,5)
from time to time, sometimes	165 (51,7)
I don't feel at all	112 (35)
<b>2. I feel fear, it seems that something terrible is about to happen</b>	
definitely it is, and the fear is very great	23 (7,1)
yes, it is, but the fear is not very great	68 (21,3)
sometimes but it doesn't bother me	114 (35,5)
I don't feel at all	115 (36,1)
<b>3. Restless thoughts swirling in my head</b>	
constantly	17 (5,4)
most part of time	29 (9,1)
from time to time and not so often	106 (33,1)
only sometimes	168 (52,4)
<b>4. I can easily sit down and relax</b>	
definitely it is	138 (43,1)
probably it is	78 (24,3)
only occasionally, it is	94 (29,4)
I can't at all	10 (3,2)
<b>5. I experience inner tension or trembling</b>	
I don't feel at all	128 (40,1)
sometimes	162 (50,5)
often	25 (7,8)
very often	5 (1,5)
<b>6. I feel restless, I constantly need to move</b>	
definitely it is	45 (14)
probably it is	68 (21,3)
only to some extent, it is	109 (34,1)
I don't feel at all	98 (30,6)
<b>7. I have a sudden feeling of panic</b>	
Very often	11 (3,4)
often	28 (8,6)
not so often	129 (40,2)
does not happen at all	152 (47,8)

## Discussion.

According to the data of our sociological survey, 27,9% of doctors in the ambulance station experience tension from time to time. In the responses, 19,1% of the respondents are afraid, and it seems to them that something terrible might happen, and only 11,5% answered yes, it is, but the fear is not very great. 17,8% of respondents gave an answer to the question "restless thoughts are spinning in my head from time to time and not so often".

To the question "I can easily sit down and relax", only 13,1% of respondents chose this answer. 27,2% of healthcare professionals reported experiencing internal tension or trembling. The answer "I feel restless" was chosen only to some extent by 18,4% of the respondents and the answer "probably so" was chosen by only 11,5% of the respondents.

To the next question, "I have a sudden feeling of panic," 21,7% of respondents answered infrequently. To the question "what brought me great pleasure, and now gives me the same feeling", only 20,1% of ambulance medical

workers answered positively; the ability to laugh and see the funny in this or that event is stated by only 16,7% of the respondents. And only 10,4% of respondents answered probably, this is so.

Table 2.

**The result of a sociological survey of respondents on the level of depression (n=320).**

Level of depression	Frequency (%)
<b>1. What brought me great pleasure, and now makes me feel the same way</b>	
definitely it is	117 (36,7)
probably it is	119 (37,2)
only to a very small extent, it is	52 (16,4)
it's not like that at all	32 (9,8)
<b>2. I am able to laugh and see something funny in this or that event</b>	
definitely it is	145 (45,4)
probably it is	99 (30,9)
only to a very small extent, it is	62 (19,3)
not at all able	14 (4,4)
<b>3. I feel energized</b>	
I don't feel at all	17 (4,9)
very rarely	58 (18,2)
sometimes	133 (41,7)
almost all the time	112 (35,1)
<b>4. It seems to me that I began to do everything very slowly</b>	
almost all the time	13 (4,1)
often	37 (11,7)
sometimes	155 (48,3)
not at all	115 (36)
<b>5. I don't care about my appearance</b>	
definitely it is	29 (9)
I don't spend as much time on it as I need to	50 (15,7)
maybe I've started to devote less time to this	68 (21,1)
I take care of myself just like before	173 (54,2)
<b>6. I believe that my activities (occupations, hobbies) can bring me a sense of satisfaction</b>	
just like usual	187 (58,3)
yes, but not to the same extent as before	83 (25,8)
much less than usual	39 (12,3)
I don't think so at all	11 (3,5)
<b>7. I can enjoy a good book, radio or TV program</b>	
often	195 (60,8)
sometimes	85 (26,5)
rarely	25 (7,9)
very rarely	15 (4,7)

To the question "I feel cheerful" 22,5% of respondents say sometimes and only 9,8% very rarely. 26,1% of the respondents answered the next question "I think that I started to do everything very slowly. Also, 11,4% of medical workers answered that they began to devote less time to their appearance; only 13,9% of respondents believe that their activities (occupations, hobbies) can bring them a sense of satisfaction not to the same extent as before, and only 14,3% of respondents answered that they can sometimes enjoy a good book, radio or television program.

International data indicate that emergency medical care is one of the unhealthiest professions with a high risk of

emotional burnout [1, 7, 19, 25]. Burnout leads to a decrease in the quality of medical care, an increase in the number of medical errors, a decrease in patient satisfaction, an increase in the turnover of doctors, an increase in costs and a decrease in productivity [16]. The health consequences for doctors include increased substance abuse, depression, and suicidal thoughts [16]. COVID-19 has fundamentally changed the world, and emergency physicians are at significant risk of further medical and psychological trauma [22]. Studies have shown the risk of depression, anxiety and mental health complaints at the forefront in China in the early days of COVID-19 [8]. Baseline data on the current level of burnout, depression and suicidal tendencies of emergency physicians in Canada will be of great importance for monitoring their health during and after the COVID pandemic, as well as for assessing the effect of any wellness interventions to support them [10].

#### Conclusion.

Emergency medicine is a specialty with high blood pressure, prone to alarming events and risk. Emergency medical doctors work in a rapidly changing and stressful environment with constantly changing conditions. Therefore, they must be ready to manage and handle everything that happens during the shift, since the specifics of the work include the potential danger of death, serious illness, injury and suffering, often without a clear solution to the problems they face. This environment can lead to an emotional breakdown of the doctor, which can be short-term or long-term, so it is vital to monitor the psychological impact on emergency workers.

#### Authors' contribution:

Kussainova D.K. – data set, descriptive part, formal analysis.

Khismetova Z.A. - scientific guidance, conception and conceptualization.

Iskakova N.S., Akhmetova K.M., Serikzhan B.S. - data collection and research resource management.

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