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The relationship between coping strategies of extreme job holders and post-traumatic stress disorders

Зв'язок копінг стратегій фахівців екстремальних професій та посттравматичних стресових розладів

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Abstract

Extreme workers are constantly exposed to negative impact in the course of their work. Over time, excessive stress and traumatic events can cause symptoms of post-traumatic stress disorder (PTSD). As a result, employees are unable to fully function as specialists, which manifests in the destructive coping strategies. The aim of the study involves determining the symptoms of PTSD and related coping strategies of extreme workers. Methods. The study is based on the use of standardized PTSD diagnostic tests (Screen PC-PTSD, IES-R, SDS) and coping strategies of employees (CSI). Data processing was carried out using quantitative analysis and statistical methods: descriptive statistics, multiple regression analysis. Results. The study showed that the symptoms of intrusion, avoidance, excitability, high depression, and destructive coping strategies is observed in emergency specialists with PTSD symptoms. It was

Анотація

Фахівці екстремального профілю постійно піддаються негативним впливам у процесі трудової діяльності. З часом надмірний стрес та травматичні події можуть викликати симптоми посттравматичного стресового розладу (ПТСР). У результаті працівники не можуть повністю функціонувати як спеціалісти, що проявляється в деструктивних стратегіях подолання стресу. Мета дослідження полягає в визначенні симптомів ПТСР та пов'язаних із ним копінг стратегій працівників. Методи. Дослідження базується на використанні стандартизованих діагностичних тестів ПТСР (Screen PC-PTSD, IES-R, SDS) та стратегій подолання працівників (CSI). Обробка даних проводилась за допомогою кількісного аналізу та статистичних методів: описової статистики, множинної регресійної аналізу. Результати. Дослідження показало, що симптоми вторгнення, уникнення, збудженості, високої

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established that specialists with PTSD symptoms have pronounced “avoidance” coping (p=0.000, β=0.082), while “problem solving” was dominant coping of specialists with no PTSD (p=0.000, β=-0.045). They have pronounced depression (p=0.000, β=0.25), as well as such symptoms as avoidance (p=0.000, β=0.27), excitability (p=0.000, β=0.33) and intrusion (p =0.000, β=0.31). Conclusions. The relationship between the PTSD symptoms of emergency workers and their coping strategies was empirically found. The avoidance strategy is the most typical for specialists with PTSD symptoms. Prospects. The obtained results can be used in the prevention of PTSD in emergency workers. They can also be used for building a model of comprehensive overcoming of the consequences of PTSD by these specialists.

Keywords: Behavioural strategies, adaptive behaviour, stress reactions, depression, post-traumatic symptoms.

депресії та деструктивних стратегій подолання спостерігаються у надзвичайних спеціалістів з симптомами ПТСР. Було встановлено, що у фахівців із симптомами ПТСР виражені "уникання" як механізм заспокоєння (p=0.000, β=0.082), тоді як "пошук рішення проблем" був домінуючим механізмом у фахівців без ПТСР (p=0.000, β=-0.045). Вони мають виражену депресію (p=0.000, β=0.25), а також такі симптоми, як уникання (p=0.000, β=0.27), збудженість (p=0.000, β=0.33) та вторгнення (p =0.000, β=0.31). Висновки. Емпірично було виявлено зв'язок між симптомами ПТСР у фахівців екстрених ситуацій та їх стратегіями заспокоєння. Механізм "уникання" є найбільш типовим для фахівців із симптомами ПТСР. Перспективи. Отримані результати можуть бути використані для запобігання ПТСР у фахівців екстрених ситуацій. Вони також можуть бути використані для створення моделі комплексного подолання наслідків ПТСР у цих фахівців.

Ключові слова: Поведінкові стратегії, адаптивна поведінка, стресові реакції, депресія, посттравматичні симптоми.

Introduction

The professional activity of certain categories of specialists has considerably been affected by significant climatic, political, scientific and technical changes in society. This impact determines the effectiveness and prospects of their activities. The extreme working environment involves not only physical overloads, but also in most cases has a psycho-emotional and psycho-physiological nature (Campillo-Cruz et al., 2021; Warren-James et al., 2022). Deviations from normal working conditions require the specialist to make voluntary efforts that go beyond the physiological norm (Thielmann et al., 2022). Because of extreme conditions, professions of this type involve difficult working conditions and, in many cases, a physical threat to life. The constant stress that such specialists experience is inevitably reflected in their personality (Machado et al., 2020) and the quality of their professional duties (McKeon et al., 2022). At the same time, each such specialist can experience strong stressful events in doing the job, which can cause negative psycho-emotional states and personality disorders. This results in the development of post-traumatic stress disorders (PTSD) in those specialists. Such disorders are characterized by the experience of anxiety (Loef et al., 2021), stress (McKeon et al., 2022), depression (Stevelink et al., 2020), psychophysiological changes (Lee et al., 2022).

The researchers studied PTSD most often in the work of servicemen, police officers, rescuers, and ambulance workers. These professions involve working in extreme conditions, that is, those that go beyond normal functioning. Numerous studies prove the wide-spread PTSD among ambulance workers. According to Ntatamala and Adams (2022), the share of individuals with PTSD symptoms in the studied population was 30%. At the same time, Petrie et al., (2018) indicate that this share is 11%, while it is 10% in the study of Bartzak (2016).

PTSD can develop over many years, and its symptoms greatly affect the specialist’ well-being. In such a situation, the specialist begins to use an avoidance coping strategy trying to mitigate the negative effect of stress (Hruska & Barduhn, 2021). This strategy involves eliminating any contact that can increase anxiety or stress. Such specialists avoid solving the problem, grounding it by various factors. The accumulation of unresolved problems and unreacted emotions leads to the complication of PTSD symptoms, personal deformations (Chen et al., 2021; Vagni et al., 2022), asocial behaviour (Ciułkowicz et al., 2021). Workers with

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pronounced symptoms of PTSD are unstable in their professional activity, often given to drinking alcohol and smoking (Jovanovic et al., 2017). This is a maladaptive behaviour, which reduces their functional capacity to work effectively (Stevelink et al., 2020).

In view of the foregoing, it should be noted that the study of the relationship between coping strategies and PTSD symptoms provides grounds for more profound research into the issue of PTSD in extreme workers, in particular, emergency workers. The aim of the study is to establish a causal relationship between basic coping strategies and PTSD symptoms. The aim involved the following research objectives:

- carry out a comprehensive analysis of diagnostic tools to ensure the validity and reliability of diagnostics;
- conduct primary screening to identify PTSD symptoms in the subjects;
- identify differences in PTSD symptoms and coping strategies of specialists with PTSD symptoms and those without PTSD;
- study the relationship between coping strategies and PTSD symptoms of the subjects.

The research hypothesis was determined based on the aim and research objectives: there is a relationship between the type of coping strategies and PTSD. Extreme workers with pronounced PTSD symptoms have a dominant "avoidance" coping, while "problem solving" coping is characteristic of specialists with no PTSD.

Literature review

In 2013, the American Psychiatric Association (APA) revised the diagnostic criteria for PTSD in the fifth edition of The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR). In the new version of DSM-5-TR, PTSD is included into the new category "Trauma- and Stressor-Related Disorders". This category involves the impact of a traumatic or stressful event as a diagnostic criterion. The following main criteria are distinguished: intrusion, avoidance of thoughts and unwanted behaviour, negative changes in thoughts and moods, changes in excitement and reactivity. In addition, each criterion has its own symptoms that characterize the state of PTSD.

The main criterion in diagnosing PTSD among those listed in DSM-5 is the impact of one or more traumatic events characterized by a real threat to the life and health of specialists. Such an event can be experienced both directly and indirectly (in the case of emergency workers), while the PTSD symptoms will be the same for them.

When determining the psychological essence of PTSD, attention should be paid to the main condition of this disorder: post-development. It is implied that this disorder is the result of a certain traumatic event that had a significant psycho-emotional impact on the individual (Horowitz et al., 1979). This results in the gradual disturbance of the cognitive, emotional and mental spheres of a person. In some cases, this leads to psychiatric disorders (Chatzea et al., 2017).

Arebo et al., (2022) note that PTSD is a disorder arising as a result of a traumatic event and characterized by re-experiencing, avoidance, negative cognitive state, psychophysiological arousal for at least one month. Berger et al., (2011) determined that PTSD syndrome is most characteristic of rescuers and emergency workers. The authors note that rescuers are at high risk for PTSD because the risk of developing PTSD increases with the number of experienced traumatic events. Bartzak (2016) believes that PTSD is an anxiety disorder caused by experiencing a traumatic event. The latter refers to the threat of death or physical injury that causes feelings of fear, helplessness, or terror.

Chen et al. (2021) state that PTSD can occur not only in direct participants of traumatic events, but also in witnesses and indirect participants. However, traumatic events have a significant impact on mental health, in particular, their experience is manifested in arousal and emotional changes.

PTSD can manifest itself with many psychiatric symptoms. The main ones are intrusion, avoidance, and hyperarousal, which occur after experiencing a traumatic event. Psychiatric symptoms of PTSD negatively affect the cognitive sphere of specialists, in particular, a negative impact on attention and executive function is noted (Lee et al., 2022).
It is noted that the ability to respond in a certain way to stressful and traumatic events is associated with behavioural coping strategies (Oliveira et al., 2019). In particular, positive coping strategies help prevent the development of PTSD symptoms in some cases (Ciułkowicz et al., 2021).

Coping strategies are defined as an individual's ability to overcome certain stressful situations and stabilize the psycho-emotional state (Freire

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et al., 2020). Coping is considered as a behavioural, cognitive, and emotional response to situations that require adaptation (Loef et al., 2021). Coping strategies reduce psychological stress and anxiety (Freire et al., 2020). Coping strategies consist of coping acts, while strategies determine coping styles of behaviour. They can be functional and dysfunctional, that is adaptive or maladaptive (Rojas et al., 2022).

Coping strategies provide psycho-emotional stability and resistance to traumatic events in ambulance workers Loef et al., (2021). It was proved that the development of psychological resilience and adaptive coping skills contribute to effective coping with stress, thereby reducing its psychological impact. This provides primary PTSD prevention (Bilsker et al., 2019).

According to Shepherd and Wild (2014) emergency medicine workers who frequently use problem-solving strategies usually have low PTSD rates. This may indicate the importance of developing adaptive coping strategies in mitigating PTSD and its symptoms.

Research analysis shows that PTSD is a consequence of a traumatic event in the work of emergency medical workers. At the same time, PTSD contributes to the development of many negative changes in the employee's personality and health. The use of maladaptive coping worsens the workers' condition and leads to its exacerbation. Therefore, it is advisable to conduct an empirical study to identify the relationship between the coping strategies of ambulance workers and the PTSD.

Methods

Research Procedure

The study was conducted from May 2022 to July 2022 in several stages. The first stage involved the study of the academic background and methodological framework of diagnostics and sampling. The diagnostic criteria and methods were selected, and the research programme was determined. The sample size, which ensures representativeness, was justified. The second stage provided for an empirical diagnostics of the selected respondents according to the aim and objectives of the research. The time distribution of the selected methods was carried out in accordance with the possibilities of surveying the respondents. The third stage involved processing of diagnostic data and interpreting the results. Quantitative, qualitative and statistical analyses were used. The fourth stage consisted in the analysis of the obtained data, identification of shortcomings and research prospects. A comparative analysis of the obtained data with existing studies was carried out, the differences were determined, and unestablished facts were substantiated.

The research was conducted on different days and hours in order to cover as many specialists as possible, as they work in shifts.

Sampling

Ambulance workers were chosen for the study among the extreme workers. This job is quite stressful and traumatic, and poorly studied at the same time. Most research examines PTSD in rescuers, servicemen, and police officers, but little attention has been paid to the study of PTSD symptoms in emergency medicine workers. In order to ensure representativeness, the study provided for a randomized sample of 230 respondents who reflect the characteristics of the general population. All subjects worked in the Emergency Department of Kyiv. They included 103 male and 127 female. The selected sample was uniform. The inclusion criterion was the age, as it was necessary to select respondents with 5 or more years of work experience to identify PTSD symptoms. Therefore, the sample included employees from 30 to 50 years old.

Methods

The methods of surveying, testing, and statistical analysis were used in order to achieve the aim of the research. Standardized methods of psychological diagnostics were used as diagnostic tools. The PTSD in the subjects was determined using the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5). The PC-PTSD-5 is a 5-item screener designed to identify individuals with probable PTSD in primary care facilities. The diagnostic process involved answers to 5 questions. In particular, the first question was to identify a traumatic event in the respondent's life. If this answer is negative, the test ends automatically with a score of 0 and this indicates the complete absence of PTSD in the subject. If the answer is positive, the subject is asked to answer additional questions that describe concomitant symptoms of PTSD during the last month. The result is positive if the subject answered 'yes' to any three or more proposed options. However, we considered positive answers to one or two questions as partial PTSD symptoms, which could have arisen under the influence of personal problems or nervous overstrain and are not trauma-related. That is

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why an additional diagnostics of PTSD symptoms and depression as the main symptom of this disorder was carried out.

The Impact of Event Scale (IES-R) was used to diagnose PTSD symptoms and their severity. This technique was published by Horowitz in 1979 (Horowitz et al., 1979). Horowitz distinguished two specific reactions of the individual to stressors in the structure of the method: “intrusion” and “avoidance”. The author attributed nightmares, obsessive thoughts and emotions to the symptoms of intrusion. Symptoms of intrusion included decreased activity and retreat from problem solving. The method was adapted in 2001 by Tarabrina in the study of PTSD in people who have experienced traumatic events. The method consists of 22 items, the answers to which enable determining the level of PTSD on three scales: “intrusion”, “avoidance” and “excitability". The calculation of points on the scales is based on the method key. The total score for trauma was determined by summing the scores of the three scales. The results were processed separately by scales, followed by the calculation of the total indicator.

Zung Self-Rating Depression (SDS). This scale was developed by Zung for diagnosing depressive states. The method was adapted in the Department of Narcology of Bekhterev Psychoneurological Institute. The scale includes 20 items that determine the respondent’s well-being and are aimed at identifying depression symptoms. The level of depression is determined based on the calculation. The absence of depression is diagnosed if the subject who scored no more than 50 points. A score of 50 to 59 indicates mild depression. A total of 60 to 69 points indicate hidden depression. A depressive state is determined when 70 or more points are scored.

The Coping Strategy Indicator (CSI) by Amirkhan. The technique involves the diagnosis of basic coping strategies that are used to overcome stressful situations. The author singles out the following among the basic coping strategies: problem solving, seeking social support, and avoidance. According to the author of the technique, the avoidance strategy describes a destructive-type maladaptive behaviour. The technique was adapted at t Bekhterev Psychoneurological Institute by Sirota and Yaltonsky in 1994-1995. The structure of the technique includes 33 statements with which the subject can agree or disagree. The results are evaluated according to the test key.

Data processing was carried out using qualitative, quantitative and statistical analyses. Calculations were performed in Microsoft Excel and SPSS 22.0. Descriptive statistics was used to analyse the mean values of the surveyed for the techniques. Multiple regression analysis was used to identify the relationship between coping strategies and PTSD in emergency medicine workers.

Ethical Criteria of the Research

The survey participants gave their informed consent for the diagnosis before the start of the study. The aim and objectives of the study were indicated. The respondents were informed that the study is completely anonymous, voluntary and will not affect them in any way. It was also stated that all data are confidential and will not be disclosed in relation to an individual subject. The research was conducted with due regard to the principles of the Declaration of Helsinki, which ensured its propriety.

Results

The obtained results showed there are persons with existing PTSD symptoms among the subjects (Figure 1).

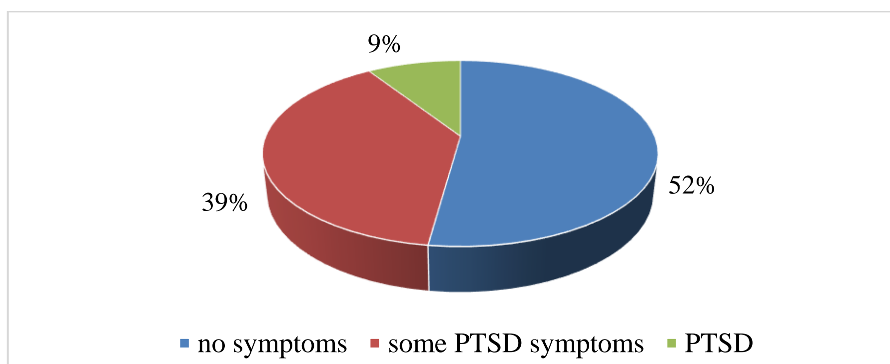

Figure 1. PTSD indicators in ambulance workers

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The first screening showed that there were specialists with PTSD symptoms among the studied ambulance workers. This indicates that this category of workers has experienced a stressful traumatic event. Such experience caused obvious or hidden negative emotional states that have a destructive effect on the worker's personality. At the same time, they continue to work without focusing on their condition, which worsens their psycho-emotional state. Such workers need urgent help from specialists to improve their functional condition.

The scale for assessing the impact of a traumatic event revealed the average indicators of PTSD symptoms in emergency medicine workers (Table 1).

Table 1.
Average indicators of PTSD symptoms among emergency medicine workers ($p \leq 0.001$)

PTSD level	PTSD symptoms						IES-R	
	intrusion		avoidance		excitability			
	M	SD	M	SD	M	SD	M	SD
No PTSD symptoms (n=120)	7.83	0.27	7.08	0.23	6.51	0.19	21.41	0.39
Some PTSD symptoms (n=89)	8.48	0.22	9.54	0.25	8.52	0.21	24.54	0.55
PTSD (n=21)	20.14	1.83	18.14	1.90	19.15	1.73	57.42	5.14

The data provided in Table 1 reflect varying degrees of severity of PTSD symptoms in the studied emergency medicine workers. It was found in the first screening that workers with no PTSD symptoms have almost the same average indicators of PTSD symptoms as workers with mild PTSD symptoms. At the same time, workers who have been diagnosed with PTSD have significantly higher rates. The "intrusion" symptom in workers with no PTSD symptoms and workers with mild PTSD symptoms is within the normal range, while this symptom is very pronounced in workers with PTSD. This indicates that workers diagnosed with PTSD have obsessive feelings and thoughts, night terrors, sleep disorders and normal lifestyle disturbances. The "avoidance" symptom corresponds to the norm in workers without PTSD symptoms and workers with mild PTSD symptoms. It is quite clearly pronounced in workers diagnosed with PTSD. This symptom demonstrates the respondents' attempts to avoid the repeated action of the stressor, to mitigate traumatic events, to switch attention, and in some cases to delve into alternative activities (excessive enthusiasm for sports, active recreation, etc.). The "excitability" symptom is characteristic within the normal range for workers with no PTSD symptoms and workers with mild PTSD symptoms. This symptom is clearly pronounced in specialists with PTSD symptoms, which indicates their neuro-psychic stress, irritability, anger, and poor concentration.

The data of the general scale of the impact of a traumatic event are within the normal range for workers with no PTSD symptoms and workers with mild PTSD symptoms. This indicator is quite pronounced in workers diagnosed with PTSD. This demonstrates dysfunctional emotional features, which developed as a result of the traumatic event.

The dominance of various strategies in selected groups of specialists was identified using the Coping Strategy Indicator (CSI) by Amirkhan.

Table 2.
Average indicators of coping strategies among emergency medicine workers ($p \leq 0.001$)

PTSD level	PTSD symptoms					
	problem solving		seeking social support		avoidance	
	M	SD	M	SD	M	SD
No PTSD symptoms (n=120)	25.6	0.73	22.15	0.77	21.64	0.58
Some PTSD symptoms (n=89)	27.44	0.84	23.87	0.80	22.75	0.69
PTSD (n=21)	14.38	1.57	29.14	1.9	31.14	1.56

The data in Table 2 indicate that the "problem solving" strategy is the dominant strategy for workers with no PTSD symptoms and workers with mild PTSD symptoms. This strategy is aimed at solving the problem situation that has arisen. Therefore, the workers who use it are quite active in dealing with stressful situations, which improves their adaptive capabilities. The

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avoidance strategy dominates in the group of workers with some PTSD symptoms. This indicates a style of behaviour aimed at reducing contact with stressful situations, conflicts or people. Such workers try to avoid traumatic events under any circumstances.

The strategy of "seeking social support" is equally used by workers with some PTSD symptoms and those without PTSD. However, in the latter use it more often. Such data describe low attempts to resort to external help from relatives and specialists in resolving a problem situation. Zung Self-Rating Depression (SDS) technique made it possible to detect signs of depression in the studied emergency medicine workers with different PTSD levels (Table 3).

Table 3.
Average indicators of coping strategies among emergency medicine workers ($p \leq 0.001$)

PTSD level	Depression	
	M	SD
No PTSD symptoms (n=120)	39.06	1.20
Some PTSD symptoms (n=89)	40.39	1.39
PTSD (n=21)	65.23	4.11

The obtained results demonstrate a low level of depression in subjects without PTSD and in subjects with some PTSD symptoms. A high level of depression was found in workers who has pronounced PTSD symptoms. Depressive states not only have a negative impact on the personality, but can also provoke other more serious emotional disorders and diseases. Therefore, overcoming PTSD symptoms must necessarily include working with depression.

A linear regression analysis was performed to establish the relationship between coping strategies and the PTSD symptoms of emergency medicine workers, which revealed the dependence between the variables. The dependent variable was the indicator of the PTSD among emergency medicine workers, the independent variables were PTSD symptoms, the level of depression, and coping strategies. The relationship between the PTSD and PTSD symptoms was studied during the analysis (Table 4).

Table 4.
Regression analysis of the relationship between the PTSD and the PTSD symptoms of emergency medicine workers

PTSD symptoms	β	SD	r (p)	R²	F	P
intrusion	0.27	0.026	0.514 (p≤0.001)	0.353	41.17	0.000
avoidance	0.33	0.032	0.519 (p≤0.001)			
excitability	0.31	0.017	0.564 (p≤0.001)			

The figures in Table 4 indicate a statistically significant effect of the PTSD on PTSD symptoms. Subjects diagnosed with PTSD have such symptoms as intrusion ($\beta=0.31\pm0.017$, $r=0.514$, $p\leq0.001$), avoidance ($\beta=0.33\pm0.032$, $r=0.519$, $p\leq0.001$) and excitability ($\beta=0.25\pm0.026$, $r=0.564$, $p\leq0.001$). Therefore, the regression model confirms the existence of a relationship between PTSD signs and PTSD symptoms ($R2 = 0.353$, $F = 41.17$, $p<0.001$). Regression analysis also revealed the dependence of PTSD symptoms and the depression level of ambulance medicine specialists (Table 5).

Table 5.
Regression analysis of the relationship between the PTSD and depression level in emergency medicine workers

PTSD symptoms	β	SD	r (p)	R²	F	P
depression	0.25	0.04	0.389 (p≤0.001)	0.245	38.55	0.000

According to the data in Table 5, high depression rates were found in workers diagnosed with PTSD ($\beta=0.25\pm0.04$, $r=0.389$, $p\leq0.001$). Accordingly, the regression model shows that

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emergency medicine workers diagnosed with PTSD have severe depression ($R2 = 0.245$, $F = 38.55$, $p < 0.001$). A relationship between the PTSD and the coping strategies of emergency medicine workers was established in the course of the regression analysis (Table 6).

Table 6.
Regression analysis of the relationship between the PTSD and the coping strategies of emergency medicine specialists

PTSD symptoms	β	SD	r (p)	R²	F	P
problem solving	-0.45	0.011	-0.174 (p≤0.01)	0.335	23.11	0.000
seeking social support	-0.021	0.011				
Avoidance	0.82	0.011	0.276 (p≤0.01)			

It was found that emergency medicine workers with PTSD symptoms use an avoidance coping strategy (β=0.82±0.011, r=0.276, p≤0.001). Problem solving is a basic coping strategy typical for emergency medicine workers who have not been diagnosed with PTSD (β=-0.45±0.011, r=-0.174, p≤0.001). The obtained regression coefficients testify to the relationship between coping strategies and the PTSD in emergency medicine workers ($R2 = 0.335$, $F = 23.11$, $p < 0.001$). A direct relationship shows the intensity of avoidance in workers diagnosed with PTSD, an inverse relationship indicates the intensity of coping with problem solving in workers without PTSD.

The obtained results statistically proved that emergency medicine workers diagnosed with PTSD use avoidance as a coping strategy for resolving stressful situations. The workers who have not been diagnosed with PTSD use a problem-solving coping strategy that is more adaptive and promotes effective functioning.

Discussion

The conducted study involved the identification of the relationship between coping strategies and PTSD in emergency medicine workers as extreme workers. It can be noted based on the results that the workers diagnosed with PTSD have pronounced symptoms of intrusion, avoidance, and excitability. They are characterized by obsessive feelings, emotions about a traumatic event, nightmares (Alshahrani et al., 2022; Bovin et al., 2021; Schäfer et al., 2019). At the same time, such workers avoid any contact with the stressor, avoid talking about the traumatic event and look for ways to avoid experiences. According to the data obtained by Thielmann et al., (2022), the workers diagnosed with PTSD have anxiety, anger, decreased concentration, behavioural disorders, hyperexcitability against the background of a decreasing general psycho-emotional well-being.

According to the general trauma scale, the studied emergency medicine workers have unfavourable emotional and personal characteristics that arose against the background of subjective perception of a traumatic event. The same results were obtained in the study of Soravia et al., (2021), who diagnosed PTSD symptoms and signs in emergency medicine workers. Their study showed that regardless of profession, the main prognostic factors of PTSD are symptoms of avoidance and distraction, alcohol consumption, self-destructive behaviour, excessive physiological excitability, irritability and aggressiveness.

A high level of depression was found in specialists with PTSD signs. Depression is a consequence of the long-term impact of a traumatic event. Emergency medicine workers with signs of depression are ineffective specialists, unable to respond constructively in difficult and stressful situations, need help. They are characterized by low adaptive potential and problems with behavioural regulation, a certain inclination to neuro-psychical breakdowns, lack of adequacy of self-esteem and real perception of reality; possible manifestations of antisocial behaviour, difficulties in building contacts with others (Vagni et al., 2022; Warren-James et al., 2022). Stevelink et al., (2020) determined that depression is a characteristic symptom of emergency workers and negatively affects their professional activity. Petrie et al., (2018) reached the same conclusion, who found a high level of anxiety and depression in emergency medicine workers with PTSD. Despite the findings of Bjørn et al., (2022), who report that emergency medicine workers have low manifestations of PTSD, anxiety, and depression, this study provides evidence that depression is a typical symptom of PTSD.

In a linear regression model, avoidance coping was a significant predictor among workers diagnosed with PTSD. Whereas problem-solving coping was predominant in workers with no

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PTSD. It follows that emergency medicine workers diagnosed with PTSD use a dysfunctional avoidance strategy in their behaviour. As Vicente et al., (2021) noted, the avoidance strategy involves the aggravation of the post-traumatic stress state due to the refusal to solve the problem, the unwillingness to think about it and react appropriately. Chen et al., (2021) also determined that the avoidance strategy is positively related to PTSD, and is characterized by distancing from problems, switching to another activity, avoiding direct contact with the stressor.

The failure to identify the traumatic event and its consequences leads to deterioration of the condition, causes complex personal changes and reduces work capacity. Moreover, as Jovanovic et al., (2017), showed in their study, this strategy leads to addictive behaviour. When PTSD is acute, avoidance coping causes alcohol and tobacco addiction.

Ciułkowicz et al., (2021) concluded in their study that healthcare workers who frequently use maladaptive avoidance strategies have more negative psychopathological symptoms. Among them, the authors primarily single out depression and social dysfunction, which, according to them, disrupt the adaptive potential of emergency medicine workers.

As a summary, attention should be paid to the data of Campillo-Cruz et al., (2021), who found the impact of routine work-related stressors on the development of PTSD among emergency medicine workers. According to their data, the more developed PTSD and avoidance strategies, the more likely the worker's condition will deteriorate under the impact of new stressors. In other words, the failure to treat PTSD will negatively affect the professional duties.

At the same time, Ntatamala and Adams (2022) identified factors that affect the occurrence of PTSD in emergency workers. Among these factors, they name age, gender, educational level, marital status. The following areas of research identified by Oliveira et al., (2019) are also important. They included sources of stress, coping strategies and means of prevention. On these grounds, the inclusion of such factors in further research can be considered appropriate and justified.

Conclusions

This study showed that emergency medicine workers with PTSD signs have dominant avoidance coping, which involves conscious resistance to traumatic events and is destructive to the individual. Workers with such coping are unable to cope with stressful situations in the course of performing professional duties. The gradual accumulation of PTSD symptoms leads to emotional distress and negative emotional states. Considering the peculiarities of the extreme type of activity, emergency medicine workers need special attention to their psycho-emotional state. Many of them ignore the PTSD signs and do not take any measures.

The limitations of the study include the complex work schedule of emergency medicine workers, which does not allow excluding all external factors influencing the diagnostic process. In some cases, workers may work two or three shifts, which worsens their condition and may give false results. At the same time, one of the limitations is the lack of control over the dynamics of PTSD development. The course of this disorder is individual and many specialists do not recognize the problem, which complicates its treatment and control.

The research prospects involve the study of the consequences of PTSD for workers, as destructive coping in stressful situations provokes the occurrence of PTSD and can cause such negative emotional states as anxiety, depression, and fear. It is appropriate to further study the corrective possibilities of the development of adaptive coping strategies of emergency medicine workers in reducing PTSD.

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