

Psychology

The Impact of Work Stress on the Seafarers Mental Health and Safety

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In today's world, performing work is often associated with stressful situations. The systematic physiological and psychological effects of stress on humans cause emotional problems of different kinds. Stress especially affects people of those occupations, whose work is connected with high risks and danger to life. During a long stay at sea, while performing of the official duties, sailors, ship specialists (ship captain, pilot, mechanic, etc.) often experience stressful situations, caused not only by a long stay at sea, but also significantly associated with a reduction of normal contacts, relationships with people, a repetition of their daily stereotyped, boring activities, the structure of which seafarers cannot influence, since they cannot change the situation itself. In addition to being in such a situation, there are also professional difficulties, that are reflected in the discrepancy between their practical level of professional readiness, mastery and correct use of equipment and technologies. We carried out a study aimed at identifying the changes in the level of anxiety of students of the Batumi Maritime Academy during the period of practical work on the ship (during the daily watch on the ship) under conditions of work stress. In particular, there was observed the tolerance of the feeling of dependence on these changes; at the same time, we have investigated the physiological changes in the body, as well as the psychological characteristics in relationships, in a state similar to sleep, during sleep and wakefulness (according to the materials of self-observation of sailors). The study was conducted in accordance with the instructions of the Taylor questionnaire for assessing neuropsychological stress and work stress. According to the results of the study, the students of the Batumi Maritime Academy revealed a range of weak and moderate psychological stress. Another issue is finding the ways to cope with stress at work. The most effective means of individual psychotherapy are conversation, explanation, personal assignment, active participation in the social life of the ship. Group psychotherapy is mainly carried out in the form of group interviews. Its particular tasks can include purposeful organization of leisure time. Such effective measures will inevitably involve individual consultations to reduce work stress among seafarers during long voyages. This issue is especially important for the coastal regions of Georgia, where the profession of a seaman is quite popular, and many of them work in various maritime companies and on ships around the world. As it is known, there is high demand for psychological counseling, which is associated with psychological problems of the seafarers during long voyages, as well as the desire of their family members to receive psychological assistance. © 2021 Bull. Georg. Natl. Acad. Sci.

Stress, work, health, safety, seafarer, mental, deprivation

The concept of "stress" has been first discussed by the Canadian physiologist Hans Selye. In his opinion, stress is a non-specific reaction of the body to any of the environmental processes that require adaptation. He considers adaptation to current changes in the life of an organism and the external world as one of the main functions of the psyche [1].

Work-related stress is a "global phenomenon." According to the UN observation, "stress has become one of the most serious health problems in the XXI century". Its presence at work is obvious. Stress affects a person physically and psychologically, causing emotional problems of a mental nature [2]. Work stress occurs when there is a mismatch between human ability and the work environment. Stress can be triggered by workload, isolation, excessive work hours, toxic work environments, restricted freedom, and tense relationships between managers and employees [3].

Stress manifests itself when doing hard and strenuous work, especially among people, whose occupations are associated with increased risk and hazardous activities. Work stress is common among seafarers, who live and work in difficult and psychologically tense conditions. Psychological factors of seafarers' working conditions prevail in a confined space and in sensory deprivation, accompanied by strict cyclogram regulations on watch and high moral responsibility.

Monotonous environment, limited ability to meet cultural needs and attitudes, sexual maladjustment, prolonged emotional stress, the need to live normally in common social conditions, extreme factors of working conditions and the activity of psychosocial influences further aggravate and make traumatic an already difficult period of a long voyage on a ship.

The source of the seafarers' psychoemotional stress is nostalgia for their homeland, complicated by an intense desire to be on land and the need to lead a common life. The desire to surround yourself with ordinary social comfort, to have normal

relationships with crew members is becoming urgent among sailors.

These factors are of particular importance for extroverts, who do not tolerate long-term psychosensory isolation, and as they are prone to excessive emotional contact, it is important and necessary for them to have constant communication [4].

For introverts and extroverts, in some cases, long-term traumatic situations can lead to significant changes in emotional well-being. In addition, seafarers have also a problem of the reasonable spending of free time, both during voyages and between voyages. A significant number of serious marine incidents are directly related to the use of alcohol and psychotropic substances. The listed factors contribute to the provocation of frequent neuroses and cannot ensure the normal functioning of the nervous system of the ship's crew [5].

Long-term emotional stress with dominant ideas and feelings of frustration is reflected in professional activities. The stress of a human-operator is a condition characterized by qualitative characteristics and intensity of physiological and mental processes that ensure the implementation of professional activities. Professional stress is characterized by the complexity of the tasks performed by the ship specialist (captain, navigator, mechanic) and the inconsistency with the practical level of his training, knowledge of technology, its correct use, etc. [6].

Negative factors contributing to the escalation of tensions can also include physiological discomfort (inconsistency of living conditions with regulatory requirements), biological fears, lack of time and services, complication of the task, excessive attention to misconduct, flaws, failures, information overload, caused by objective circumstances. In terms of stress at work, it is interesting to consider the excerpts from interviews we have recorded with active seafarers:

Nika, 27 years old: During the voyage on the ship, the first two weeks were a process of getting used to the new environment. Being in the middle of the sea, I felt like in a prison. Imagine, the sea is around and there is no end of the edge. You look at it every day and you force yourself to get used to the same faces ...

Nukri 22 years old: On the ship I have an attack of inexplicable fear, I am overwhelmed by a feeling of loneliness and I cannot overcome this feeling in any way, I cannot share it with anyone, because I do not want to become an object of ridicule ...

Zaur 69 years old: I worked as a mechanic in the ship's mechanical department, where temperatures often exceeded 47 degrees Celsius. During my stay on the flight, my pulse always quickened, I was always tense and irritated.

Yasha 77: I worked as a captain of an oil tanker during the Soviet period in the 1980s. On one of the long voyages, our ship changed course after a collision with a Dutch tanker and hit a reef. 170,000 tons of oil spilled into the Mediterranean Sea, for which I was prosecuted and sentenced to prison. It's probably hard to imagine what a stressful situation I was in, but I didn't even think about changing my job or profession. After my release, I began to live anew. I became a sailor, and years later I was reinstated in the rank of captain...

The following types of professional stress can be distinguished [7]:

1. Intellectual – tension caused by the development of a maintenance plan, an abundance of problematic maintenance situations and frequent intellectual processes;

2. Sensory – tension caused by improper functioning of sensory and perceptual systems; it occurs when perceiving necessary and complex information;

3. Monotonous – tension caused by the monotony of the work performed, the inability to transfer one's attention to another subject;

4. Polytonic – tension caused by the need to switch attention, often in an unexpected direction;

5. Physical – tension of the body caused by increased load on the human muscle-skeletal system;

6. Emotional – tension caused by conflict conditions, emergency and catastrophic situations;

7. Expectation stress – tension caused by the need to be ready to perform official duties, even in the absence of action;

8. Motivational stress – tension associated with the struggle with motives, the choice of criteria for making a decision;

9. Fatigue – tension that is associated with a temporary decrease in working capacity caused by long-term work, etc.

We have conducted the research aimed at determining the level of anxiety among students of the Batumi Maritime Academy during the period of practical work on the ship (while on watch) under conditions of industrial stress. The study has been carried out in accordance with the instructions on neuropsychological stress, assessment of working stress according to T.A. Nemchin and Taylor's questionnaire [8].

The express-questionnaire is based on selection methods. There is a list of adjectives, from which the applicant must choose words that more or less correspond to his mental state. In this case, he is offered a number of adjectives, from which he must choose 5-7 words. For work with onboard personnel, a list of the following words is recommended:

The analysis of the words chosen by the applicant allows us to judge the inclinations of his mental and emotional state for specific purposes. During a long voyage, it is very important for a seafarer to assess independently his own mental state. A person always and in any conditions observes himself, tries to understand his feelings and perceptions, his relationships and interdependencies. For many, this happens unintentionally and, therefore, unreasonably. In such cases, changes in a person's state can be both positive and negative.

Out of 100 respondents we received:

1. exhausted and tired - 5%;
2. Energetic and optimistic - 47%;
3. Stressed - 12%;
4. Confident - 19%;
5. Passive and indifferent - 4%;
6. joyful and generous - 7%;
7. Annoyed and aggressive - 6%.

In the psychological literature, much attention is paid to the diagnosis of the mental state, to determine which they use various methods, including testing attention, logical thinking, memory. For example, Taylor's questionnaire is often used to define the level of emotional and stressful states. Taylor's questionnaire comprises 50 statements/questions, for which answer "Yes" is in case if a person thinks the statement is consistent with his behavior and / or character; answer "No", if he disagrees with this statement; "I don't know", if he is at a loss to answer. The present method has been used in the survey of students of the Batumi Maritime Academy to study stressful tension while performing work.

Data processing requires out of questions was:

- to count the number of "Yes" answers from 1 to 37;
- to count the number of "No" answers from 38 to 50;
- to count the number of "I don't know" answers in the whole questionnaire and divide them by 2;
- to sum up the results obtained.

The higher the amount received, the higher the alarm condition. This is especially noticeable in stressful situations, when emotional stress reaches its climax. Such a condition is quite often characteristic of seafarers during long voyages. Therefore, the diagnosis of the mental state of personnel using the discussed technique can be justified. For example, let us take the above diagnostic data, received from the students of Batumi Maritime Academy, who underwent maritime practice on a ship intended or students of the Academy. Psychological studies in preparation

for sailing in the sea showed that the state of excitement and anxiety among sailors usually did not exceed the established values on average. Basically, the data of the majority of seafarers and commanders fluctuated within the average values. In rare cases, the level of excitement and anxiety was above average. In addition, there were some cases when several sailors-trainees experienced a very high level of anxiety, although, this did not manifest externally, and psychologists made great efforts to identify the causes of such anxiety. Of course, the state of anxiety isn't a stress itself, but it is already a prerequisite for stress and a result of the accumulated internal tension. Nevertheless, even Sigmund Freud noted that stress occurs when a person has a negative painful perception, which is in sharp conflict with fundamental values: "A painful perception," he wrote, "excludes itself and creates an isolated mental group with what is related to it". But initially, it had to be presented in the mind, in the main stream of thoughts, otherwise there can be no conflict, which is the reason for such an exclusion". Freud considers such moments the "traumatic" ones. At this time, a conversion occurs and leads to a "separation of thoughts" and leads to a "hysterical symptom". In this case, there is resistance to any attempt to establish a connection between a painful perception and deliberate processes" [9].

Thus, in order to avoid stress, it is necessary to find out the reasons for the occurrence of negative perception (in our case, anxiety, excitement) and help the person to cope with them.

Out of 100 respondents:

1. I am usually in a balanced and good mood - 51%.
2. Being at sea, I almost constantly feel anxiety about the expected threat -3% .
3. I usually work in a stressful environment - 6%.
4. I consider myself brave compared to my friends -10%.

5. I am not worried about something new or difficult - 9%.

6. Service on board is almost always associated with unusual stress - 3%.

7. I find it very difficult to concentrate on my duties while on watch - 7%.

8. I have difficulty concentrating during training, study and exercise - 5%.

9. I find it difficult to fall asleep after the watch -2%.

10. I am often in a state of uncertainty- 4%.

According to the results of the study, a range of weak and moderate psychological stress was revealed among the students of the Maritime Academy.

There are many ways to manage stress at work in marine psychology. It is especially important to involve the crew in physical activity during long voyages, to do regular daily exercise and training. The direct actions of the ship commanders on the implementation of measures related to psychohygiene and psychoprophylaxis of the mental state of personnel are also relevant. Great importance is

also attached to maintaining order and discipline on the ship, establishing job relations between crew members, developing effective communication and psychological compatibility, improving working and leisure conditions, developing positive individual and collective feelings and moods. The implementation of psychological measures should be aimed at eliminating acute psychogenic factors; effective, rational means should be used to solve difficult situations arising in the crew; the results of affective reactions and sudden hysterical behavior of some seafarers should be correctly evaluated. The most effective means of individual psychotherapy are conversation, explanation, personal assignment, active participation in social life on board. Group psychotherapy is mainly conducted in the form of group interviews. Its particular tasks can be solved by purposefully spending an organized vacation. Taking these effective measures will help reduce work stress for seafarers on long voyages and create a healthy psychological climate on board.

ფსიქოლოგია

სამუშაო სტრესის გავლენა მეზღვაურთა მენტალურ ჯანმრთელობასა და უსაფრთხოებაზე

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**ბათუმის შოთა რუსთაველის სახელმწიფო უნივერსიტეტი, ტექნოლოგიური ფაკულტეტი, ტექნოლოგიებისა და საინჟინრო მენეჯმენტის დეპარტამენტი, ბათუმი, საქართველო

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თანამედროვე სამყაროში სამუშაო საქმიანობის შესრულებისას სტრესის არსებობა აშკარად გამოკვეთილია. სტრესი ადამიანზე ახდენს ფიზიკურ და ფსიქოლოგიურ ზეგავლენას, იწვევს მენტალური ხასიათის ემოციურ პრობლემებს. სტრესი გავლენას ახდენს, განსაკუთრებით, იმ პროფესიების მქონე ადამიანებზე, რომლებიც მაღალი რისკისა და სიცოცხლისათვის საფრთხის შემცველ სამუშაოებს ასრულებენ. მეზღვაურები, რომლებიც ცხოვრობენ და შრომობენ რთულ და ფსიქოლოგიურად დაძაბულ პირობებში, ხანგრძლივი ნაოსნობის პერიოდში, ხშირად განიცდიან სტრესული სიტუაციების ზეგავლენას. სამუშაოებს, რომლებსაც ასრულებს გემის სპეციალისტი (გემის კაპიტანი, გემთწამყვანი, მექანიკოსი) ხშირად თან სდევს დაკისრებული მოვალეობის შესაბამისი პროფესიული სირთულეებიც, რაც მათი პროფესიული მზაობის პრაქტიკული დონის, ტექნიკისა და ტექნოლოგიების ფლობის, მათი სწორად გამოყენების შეუსაბამოებაში გამოიკვეთება. ჩვენ მიერ ჩატარებულ იქნა კვლევა, რომელიც მიზნად ისახავდა, ბათუმის საზღვაო აკადემიის სტუდენტებში, გემზე პრაქტიკული სამუშაოების შესრულების პერიოდში (გემზე სადღეღამისო საგუშაგოზე ყოფნისას), სამუშაოსთან დაკავშირებული სტრესის პირობებში, მათთან რამდენად იყო უფოთიანობის დონე მომატებული. კვლევა ჩატარდა ნეიროფსიქოლოგიური დამაბულობის, სამუშაო სტრესის შეფასების (ტ. ა. ნემჩინის მიხედვით), ინსტრუქციებისა და ტეილორის კითხვარის მიხედვით. ჩატარებული კვლევის შედეგების მიხედვით, ბათუმის საზღვაო აკადემიის სტუდენტებში გამოიკვეთა სუსტი და ზომიერი ფსიქოლოგიური დამაბულობის დიაპაზონი. სამუშაო სტრესისაგან დამღევის გზები საზღვაო სფეროს ფსიქოლოგიაში მრავალმხრივია. ინდივიდუალური ფსიქოთერაპიის ყველაზე ეფექტური საშუალებებია საუბარი, განმარტება, პერსონალური დავალება, გემის საზოგადოებრივ ცხოვრებაში აქტიური ჩართვა. ჯგუფური ფსიქოთერაპია ძირითადად იმარ-

თემა კოლექტიური გასაუბრებების ფორმით. მისი კერძო ამოცანები შეიძლება შესრულდეს ორგანიზებული დასვენების მიზანმიმართული ჩატარებით. ამგვარი ქმედითი ღონისძიებების გატარება ხელს შეუწყობს შორეული ნაოსნობის პერიოდში მეზღვაურთა შორის სამუშაო სტრესის შესუსტებას და გემზე ჯანსაღი ფსიქოლოგიური კლიმატის ჩამოყალიბებას.

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