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## HEALTH AND LIFE QUALITY DIFFERENCE BETWEEN TURKISH FLEET SEAFARERS AT WORKING IN INTERNATIONAL AND NEAR COASTAL VOYAGE

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### ABSTRACT

*Seafarers' working standards are heavier, and the time spent at sea reveals the differences in health and quality of life as the most critical elements with the vital role of the time element in the distance. It is thought that depression is one of the most important psychological effects of the problems experienced by seafarers who travel far or close distances at certain distances. Depression is one of the significant health problems of seafarers. In the literature, age, weight, height, time spent on board, marital status, child status, habit, education level, maritime experience, last duty on board, ship type, and income status are the variables that used to determine the difference in depression and quality of life. Ships also have limited communication opportunities, and the same environment and the situations in which they live cause events such as limited quality of life. In this study, in the awareness of depression, the seafarers' quality of life is also demonstrated by taking precautions against the situations they experienced and experienced. In addition, the difference in the quality of life of the seafarers, depending on the health and working conditions of the ships, which are the working environment, are evaluated, and recommendations are made to improve the current conditions. As a result, although few factors are affecting the difference in depression levels and quality of life, it has been observed that many psychological factors are affecting the quality of life in the literature.*

**Keywords:** *Seafarers, International Voyage, Near-Coastal Voyage, Depression, Quality of Life, Health.*

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## UZAKYOL VE YAKINYOL MESAFEDE ÇALIŞAN TÜRK FİLOSU GEMİ ADAMLARI ARASINDAKİ SAĞLIK VE YAŞAM KALİTESİ FARKI

### ÖZ

*Gemi personelinin çalışma standartları daha ağır ve zaman unsurunun yol mesafesindeki önemli rolü ile denizde geçen süre, sağlık ve yaşam kalitesi farklarını en önemli unsurlar olarak karşımıza çıkartmaktadır. Belirli mesafelerde uzak veya yakınyol kat eden gemi personelinin yaşadığı problemlerden depresyon olgusunun psikolojik olarak gemi çalışanlarına çok önemli etkileri olduğu düşünülmektedir. Gemi personelinin karşımıza çıkan sağlık problemlerinin başında depresyon gelmektedir. Literatürde ise yaş, kilo, boy, gemide geçirilen süre, medeni durum, çocuk sahibi olma durumu, alışkanlık, eğitim düzeyi, denizcilik tecrübesi, gemideki son görev, çalışmakta olunan gemi tipi, tonajı, uzakyol ve yakınyol ayrımı için sefer tipi ve gelir durumu depresyon ve yaşam kalitesi farkını belirlemede kullanılan değişkenlerdir. Gemilerde sınırlı haberleşme imkânları, sürekli aynı ortamda bulunma gibi yaşanan durumlar da yaşam kalitesinin kısıtlı olması gibi olayların tetiklenmesine neden olmaktadır. Bu çalışmada, depresyon durumunun farkındalığı içerisinde; yaşadıkları ve karşılaştıkları durumlar karşısında önlemler alarak gemi personelinin yaşam kaliteleri ortaya konmuştur. Ayrıca, gemi personelinin, çalışma ortamı olan gemilerdeki sağlık durumu ve çalışma koşullarına bağlı olarak yaşam kaliteleri farkı değerlendirilmiş ve mevcut koşulların iyileştirilmesi için önerilerde bulunulmuştur. Sonuç olarak depresyon düzeyleri ve yaşam kalitelerinin farkını etkileyen az etken bulunmakla beraber, literatürde yer alan çalışmada yaşam kalitelerini etkileyen birçok psikolojik etken olduğu gözlemlenmiştir.*

**Anahtar Kelimeler:** *Gemi Personeli, Uzakyol, Yakınyol, Depresyon, Yaşam Kalitesi, Sağlık.*

### 1. INTRODUCTION

The seafarers are separate and away from the people they connect with and their social circles as they continue their working lives on the ships. Another factor affecting seafarers' life and health conditions is the international and near-coastal voyage (Tasdelen et al. 2016: 217-241). Considering these situations, seafarers are expected to be affected psychologically, socially, and economically. Although it is thought that maritime activities generally take place internationally, and the seafarers' international competency degrees, their quality of life, and health status are positively affected, this is known as a false situation. It is not true that the seafarers' international competency degrees positively impact their quality

of life and health status. Different variables affect seafarers' quality of life and health status (Kaya et al. 2007: 37-46).

Seafarers experience various problems as they are far from their families and living environments. These problems pose issues in international and near-coastal voyages as mental disorders in seafarers if they cause depression among seafarers. The women of the seafarers take full responsibility at home. This situation causes psychological problems and changes in quality of life when seafarers are away from home (Kaya et al. 2007: 37-46). Seafarers experience inadequate relations with their social environment due to their professional obligations. They are longing for the seafarers to want his job to be completed as soon as possible, but even if it ends, his job status is uncertain, he is away from family members, not being able to meet with his social circles. This situation causes depression in every period of seafarers. The development of technology worldwide has also raised several problems related to seafarers' health and quality of life. It has become essential that these problems, which were ignored initially, should be considered again, as they endanger work efficiency and organization (Isıklı et al. 2007: 7-12).

This study evaluates the difference in seafarers' quality of life, depending on the ships' health and working conditions with the working environment. Besides, suggestions are made to improve the current conditions. In the study, the difference in depression and quality of life conditions faced by seafarers is examined. Moreover, a guideline has been created for seafarers to reference the negativities in their professional status. The findings and differences of the study regarding the depression level and quality of life are obtained. This study contributes to the results to be more realistic and plausible by approaching the decision-making process problem in practice more objectively. In the second part, information about depression and quality of life is given. The third section conducts a literature review on seafarers' depression level and quality of life. In the fourth section, by going to the methodology section, the data collection tool, and the sample space, how to conduct studies such as data analysis are given. In the fifth chapter, the study's findings on depression level and quality of life are mentioned, and the emerging differences are presented. In the results part, data on improving the level of depression and quality of life obtained from the study are included.

## **2. DEPRESSION AND LIVING QUALITY OF SEAFARERS UNDER THE HEALTH AND WORKING CONDITIONS**

Although depression is one of the most important diseases of our time, it is one of the most common clinical conditions worldwide and one of the most common situations in our society (Tasdelen et al. 2016: 217-241). Explaining depression with cognitive theory, Beck (1976) argues that depressed individuals tend to negatively evaluate themselves, their immediate surroundings, and their futures and negative cognitive thinking in their thinking structures. Negative automatic thoughts can also explain these cognitive deceptions. In studies conducted on seafarers, it is seen that the most important mental disorder is known as depression (Beck, 1976; Dogan et al. 1995; Deveci et al. 2013: 98-102).

The emergence of sheltering, economic and social relationship problems, especially the ground-motion of the seafarers working in the international and near-coastal voyage, increases depression levels in the seafarers and emerges as a problem of thought in the seafarers' minds. Depression is known as the most severe emotional problem faced by seafarers (Ozguven, 1992: 5-13). Seafarers try to strike a balance between their expectations and those of other seafarers. Besides, they try to discover themselves. As a result of these emotional states, the seafarers can become vulnerable to many psychological symptoms, such as aggressive, offensive, anxious, and thoughtful moods, due to uncertainty and adaptation problems (Ceyhan et al. 2010: 75-90). Depression is a common, chronic, and high recurrence among psychologists. It is also known that depression creates a critical health problem in the maritime area, as it causes an emotional collapse on the seafarers and causes loss of workforce. Therefore, defining depression, treating, preventing, and determining risk factors are of great importance (Bozluolcay and Ince, 2004: 57-61).

### **2.1. Symptoms and Causes of Depression**

Depression symptoms can occur in different ways in seafarers. As the mood, not being able to enjoy the outside of the environment in a certain level or being unhappy all day or almost invariably every day, mentally; it can be stated as not seeing itself as valuable, anxiety about the future, falling asleep, and slowing movement in general (Gonul, 2012: 1-5). The causes of depression arise from the complex interaction of biological, psychological, and social factors. People who are faced with difficult life events (unemployment, age, psychological trauma) seem to be more likely to get depressed. When thinking of seafarers and working

conditions, depression causes more stress, dysfunction, and social life in the seafarers. There is also a mutual interaction between depression and physical health. Negativity in physical health can lead to depression or vice versa (World Health Organization, 2012). The seafarers' stress situation working onboard has been analyzed with the Psychological General Well-Being Index (PGWBI) survey. As a result, it is understood that the engine officers had high anxiety. The reason for this high concern may be the heavy work environment. Besides, according to this PGWBI survey results, it has been understood that people working in sub-units have lower energy (such as Chief stewards/catering staff) (Carotenuto et al. 2013: 215-220). Multiple studies are being conducted on stress, fatigue, and well-being. Besides, there are currently studies on these issues in the onshore civilian population. As a result of these studies, the necessary information has been obtained. However, there is little research on seafarers' stress, fatigue, and well-being working in the maritime industry. Therefore, research on maritime should be increased. To do this, specific marine contexts must be carefully studied, and a conclusion must be made based on the knowledge gained. With this result, the problems of seafarers may be solved (Smith, 2019: 132-139).

### **2.1.1. Biological Causes**

A mood disorder is an exaggerated emotional state of people. It also appears that first-degree relatives of people with mood disorders have a high risk of getting sick (Ozturk, 2004). The presence of a person who is having a depressive disorder in his family history seems to increase the likelihood of depression among seafarers (Koroglu, 2004). In great depressions in individuals, heredity is more effective than minor depressions. Depression occurs in seafarers, such as anxiety, alcohol dependence, and aggressive behavior. Besides, seafarers' depression at an early age indicates a genetic tendency (Ersan and Ercan, 2001: 277-282). Depression frequently co-occurs with multiple chronic diseases is complicated, costly, and dangerous patterns of multimorbidity. The present review addresses these issues by focusing on 4 of the most prevalent diseases: hypertension, ischemic heart disease, arthritis, and diabetes (Birk et al. 2019: 802-811). Depression predisposes to medical conditions and promotes biological aging, which is indicated by shorter telomere length, accelerated brain aging, and advanced epigenetic aging. Medical illnesses also increase the risk of depression in old age (Alexopoulos, 2019: 2-16). Seafarers live far from land with a high workload and biological disturbances. Due to non-compliance with marine life, seafarers can have chronic diseases. Therefore, Dong (2020) proposed the influence factors of aerobic exercise on ocean-going seafarers' constitution based on exercise

intervention and regulation (Dong, 2020: 566-569). People can keep their bodies and mind healthy by doing brain exercises. Psycho-neurobic exercise can be used as a brain exercise. If the psycho-neurobic exercise can be practiced on seafarers, it can control it when seafarers have any illnesses. In addition, seafarers can reduce the stress they experience daily with psycho-neurobic exercise (Dhankhar et al. 2020: 87-101).

### **2.1.2. Psychological Causes**

The change in people's mood causes depression and changes in their quality of life (Mohammad et al. 2020: 127-144). Gurhan et al. (2019: 840-848) stated in their study that people with poor mental health, low quality of life, poor economic situation, and meager support from their families are more prone to depression and suicidal behavior than other people. Depression is one of the common psychiatric disorders affecting all humanity. If depression is not treated, negative consequences such as early death and general health deterioration will occur. It is possible to increase the patient's quality of life when correctly diagnosed and treated appropriately (Celik and Hocaoglu, 2016: 51-66). Since its development, it has been argued that depression has resulted from the interaction of genetic, neurochemical, and cognitive factors. According to this model, mental disorders of depression are based on three principles. These are cognitive triples (the individual makes sense of himself, his environment, and future negatively), repetitive patterns or mental errors that lead to distorted information processing processes and beliefs, and depressive thought schemes. Thus, it is said by the model that the individual may create distortions in his perceptions, evaluations, and interpretations of their environment and himself in the cognitive field and cause depression in these repetitive thought schemes by causing the emotion of pessimism and helplessness in the individual (Hisli, 1989: 3-13). COVID-19 will stay in people's minds for a long time. Therefore, people need psychological counseling. Also, seafarers have been affected by the COVID-19 transmission situation. This situation has affected the maritime industry economically, and on the other hand, upset the psychology of people (Mittal et al. 2020: 213-214). In recent years, psychological health problems have become widespread in people around the world. Especially many technological products invented in recent years have influenced people. This situation has made people alone; moreover, it has revealed many psychological disorders such as anxiety, depression, and stress. Also, seafarers have had their share of these psychological ailments (Kumar et al. 2020: 1989-1998).

## **2.2. Depression Frequency and Treatment**

Seafarers are trying to strike a balance in fulfilling their expectations and the expectations of other people around them for reasons such as the intense pace of the environment in which they operate, the stressful atmosphere, and the increase of their independent responsibilities. On the other hand, problems such as the increase of seafarers' respective duties and being away from their families raise the necessity to cope with different seafarers' stressors. In this process, it is seen that the seafarers who need psychological support are suffering from mental problems at the appropriate times by the support systems. Namely, this time frame is quite turbulent for seafarers' mental state (Ceyhan et al. 2010: 75-90; Okdem and Yardımcı, 2010: 228-234).

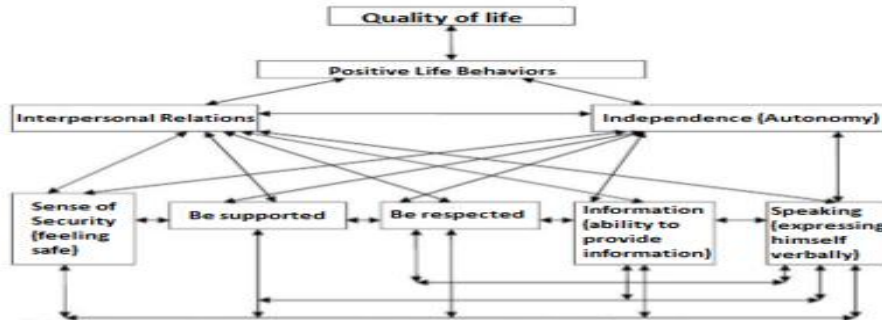
One of the most important difficulties has related to depression treatment is that the clinical condition defined as depression is caused by many diseases in which many causes are included (Harald and Gordon, 2012: 126-140). Considering the seafarers, this situation becomes more difficult. Many people may feel incomplete and worthless at times. This is not an indication of weakness. If these feelings have been causing depression, they can be overcome with professional help (Tarhan, 2013). Seafarers put a lot of effort into the safety of the ship during voyages. It inevitably causes psychological problems for seafarers. Besides, psychological issues in seafarers can lead to permanent problems with functional brain networks. For the evaluation of this psychological problem, reaching the result with absolute methods should be considered. When this situation is evaluated, it will be seen that seafarers have better mental health (Wang et al. 2020).

## **2.3. Life Quality**

It qualifies its life quality as “World Health Organization's perceptions of individuals about their position in the culture and values system they live in, considering their goals, expectations, standards, and interests.” The quality of life for seafarers is expressed as the physical, psychological, and social level of the environment in which they operate (Gulagız and Ergin, 2005: 379-390).

As shown in Figure 1, the dimensions, and qualities of the concept of quality of life of seafarers can be classified under the title of positive life behavior under the maritime relations and autonomy sections. In these sections, seafarers can speak in subcategories, provide information,

support, and give the desire to be safe. These days, there have been significant developments in the health strip with the development of technical knowledge. With this development, although people have chronic diseases at the stage of travel, they have a more extended life opportunity due to technology development. In this case, life qualities are also negatively affected (Bond and Corner, 2004).



**Figure 1:** Dimensions and Qualities of the Concept of Quality-of-Life Source (Berk, 2007).

Although it is difficult to generalize, according to the results of some studies, seafarers' quality of life and conditions may also vary depending on the ownership of the ships. For example, vessels belonging to Northern European countries, the USA, Japan, and South Korea generally offer a better quality of life and seafarers' conditions. In contrast, other countries' ships are relatively lower in quality of life. Despite the expectation that minimum living standards will reach better levels due to the advancement of technology and the high importance of international organizations such as ILO, some situations in the new ships built affect the seafarers' quality of life. An example is the inability to fully isolate the vibration and noise generated by the main machine running continuously.

### **3. LITERATURE REVIEW FOR HEALTH AND LIFE QUALITY OF SEAFARERS**

Dogan et al. (1995) state that depression is the most common psychiatric disorder globally and in our country. This is also the case for seafarers. Besides, they have encountered the risks posed by major depressive disorders in their quality of life. In the literature they examined, Mowbray et al. (2006: 226-237) stated that depression and mental problems are essential problems in terms of health, and it is a problem seen in all individuals (Dogan et al. 1995; Mowbray et al., 2006: 226-237).



The study by Salyga and Juozulynas (2005: 759-769) is the first scientific research involving a national cross-sectional survey of Lithuania and Latvia of seafarers of two different countries, including the evaluation and comparison of the working environment quality of life, health, health prevalence of seafarers. However, it is to reveal the differences according to the damaging risk factors. It is observed that depression occurs more frequently than the shore in the sea, disturbed working and rest regime and regular sexual life due to time zone changes. Many of the unique aspects of maritime do not change; however, it seems possible to change, support, or develop new strategies to reduce these factors' impact on the individual seafarers' health. It shows that adverse environmental conditions also affect depression and life quality (Salyga and Juozulynas, 2005: 759-769).

Arslan (2006), in his study, is determined that while staying on board with 212 seafarers, the most problems are experienced from staying away from social life, family, and environment and not reaching the things needed in time. These problems are followed by high working hours, bad weather, constant coexistence, and dependent relationship on board. In the same study, it is determined that seafarers had problems getting out of the ship and adapting to social life, and the satisfaction of the seafarers was low. Along with stress, the most significant sources of depression have revealed difficulties in communicating with the family, dullness, family longing, fatigue, and personnel relations (Arslan, 2006).

Rydstedt and Lundh (2010: 168-175) examined the differences in psycho-social working conditions and mental health between British Machine Officers working on the beach and Swedish Machine Officers working on board. They have revealed that seafarers are experienced psychological depression problems with their studies. Working on ships means that the crew will be separated from their families for a long time, and the job can create a family and environmental conflict. Factors such as extended stay away from home and family members, role differences make emotional and mental problems on seafarers and prove that they affect their quality of life (Rydstedt and Lundh, 2010: 168-175).

In the study conducted by Kurt (2010), the seafarers' burnout status working on Turkish flagged ships is examined according to their age and working time. Besides, the survey results applied to 43 seafarers are evaluated using the SPSS method. It is concluded that seafarers are affected by insufficient sleep, noise, and long periods of work (Kurt, 2010). In the study by Yur and Nas (2012), it is scientifically stated that the seafarers' social efforts and how they overcame these efforts when they are on the ship. In the study, data are obtained by discussing mutually with the

seafarers' spouses by the judicial sampling method, and the results are revealed (Yur and Nas, 2012: 7-12).

In the work of Jeżewska et al. (2013: 101-105), the relationship between Polish seafarers' quality of life and personality and quality of life is examined. Three hundred seafarers, whose average age is 44, participated in this study. The WHOQOL-BREF method is used in the study, and the PTS and NEO-FFI method is used in the survey conducted on seafarers. When the obtained data are evaluated, it is seen that the quality of life of Polish seafarers is high (Jeżewska et al. 2013: 101-105).

Jeżewska and Grubman-Nowak, (2015: 247-251) said it is challenging to work at sea. Besides, working at sea affects seafarers environmentally, physically, and psycho-sociologically. At the same time, they think that this effect influences the seafarers' quality of life and work. Between 2011 and 2014, 1700 Polish seafarers working at sea with an average age of 45 are surveyed with the quality of life. When the survey results are evaluated, it is revealed that the quality of life of Polish seafarers is high (Jeżewska and Grubman-Nowak, 2015: 247-251).

Tasdelen et al. (2016: 217-241), in their study, evaluate the family-work conflict and the negative impact of the seafarer on the work-family conflict and that the seafarers are psychologically affected (Tasdelen et al. 2016: 217-241).

In the studies of Hystad and Eid (2016: 363-371), the effects of stress, time spent at sea, experience, and psychological capital on the sleep quality and life of the seafarers are compared with the seafarers working on the land. A survey was conducted on 340 people who work on land and 400 people who work on ships about maritime. As a result, people who work on the ship have more fatigue and lack quality of life depending on sleep quality than those working on the land (Hystad and Eid, 2016: 363-371).

Mellbye and Carter (2017: 108-114) have striven with depression and suicide in seafarers. They evaluated the available evidence about depression and suicide prevalence and tendencies among seafarers. Reviewing mental distress and unhealthy conditions supports the reduction in the frequency of problems and events. They emphasize that depression, especially in seafarers, is caused by age, gender, nationality, mental and psychological state, rank, and expedition. Moreover, they have stated limitations that could prevent it (Mellbye and Carter, 2017: 108-114).

Seafarers work very intensively on the ship. After this intense work, there should be places where seafarers can exercise in their professional environment to work more motivated. Besides, health personnel should be provided to prevent psychological and mental fatigue. Moreover, cultural entertainment, interpersonal visual, and audio communication training should be offered to seafarers to socialize. If these issues are done for seafarers, their quality of life will be improved (Xiao et al. 2017).

In the study are conducted by Gokcek and Tavacioglu (2018: 137-155), the prevention of the problems that arise in the seafarers who are in social isolation in the ship environment, and the evaluation of leisure time in the ship environment are discussed. Structural equation modeling is compared in terms of free time, life, and emotionality. It has been concluded that in seafarers, activities that they can do in their spare time and to participate in these activities and emotional intelligence should be improved to reduce the impact of social isolation and lead a better life (Gokcek and Tavacioglu, 2018: 137-155).

Kim and Jang (2018: 1-11) worked with 320 seamen working on the ship for more than half a year. In this study, the factors affecting sailors' quality of life (organizational culture and support, self-efficacy, feeling of fatigue, quality of work-life) determine corporate culture and self-efficacy as factors affecting the quality of business life. It has revealed that organizational support indirectly affects self-efficacy, and that fatigue and self-efficacy are important for seafarers' quality of life (Kim and Jang, 2018: 1-11).

Yilmaz and Ilhan (2018: 25-41) addressed Turkish flagged ships' occupational health and safety practices and the risks and dangers of exposing seafarers. A survey was conducted with 652 Turkish seafarers. Moreover, in the evaluations, the emphasis has been placed on raising the awareness of seafarers against dangers and risks and training (Yilmaz and Ilhan, 2018: 25-41).

The welfare level of people working on the land is increasing day by day. However, the welfare level of seafarers has not increased that much. Therefore, the Maritime Labor Convention (MLC 2006) has been put into effect to reduce seafarers' unfair treatment. Hence, the welfare of seafarers has increased. Besides, seafarers have gained psychological comfort (Exarchopoulos et al. 2018: 62-70).

Fernandez et al. (2018: 1-7) proposed the conceptualization of depression among Filipino seafarers. This proposal provided an opportunity to understand Filipinos' perspectives on social life and their

culture. The attitudes and depressive effects of Filipinos towards social life were examined. Besides, the situation of comparing depressive feelings with those living in Europe-America and Asia was revealed (Fernandez et al. 2018: 1-7).

Sau and Bhakta (2019: 1-11) stated that seafarers suffer from various mental health disorders, mainly anxiety and depression. Therefore, they expressed the need for periodic screening for anxiety and depression for their health and well-being. They claimed that machine learning technology could be helpful as a fast and automated screening procedure to identify seafarers at risk for early referral to counseling and treatment (Sau and Bhakta, 2019: 1-11).

Dachev and Lazarov (2019) claimed in their study that the seafarers are unable to adapt to life on land within the normal and expected time after disembarking due to their long-term contracts. As a result of this situation, health and mental impairment and disorders may occur in seafarers (Dachev and Lazarov, 2019: 282-287).

Most of the trade in the world is transported by sea. Therefore, seafarers must work in sea transport. Besides, great efforts are being made by companies to employ quality and stress-management seafarers. However, although seafarers who can manage stress have been employed, studies on seafarers' mental illness are insufficient. As a result of this preliminary study, obtaining information about the suicidal situation was limited (Lefkowitz et al. 2019: 279-282).

Seafarers have limited resources on the ship. They must sustain their own lives with these limited resources. However, this may negatively affect the psychology and mental health of seafarers. Seafarers can get mental problems on their own. Therefore, seafarers should be counseled for mental health. Besides, the ship's owner or agent should improve the ship's communication infrastructure and entertainment facilities. Because keeping seafarers away from stress will be possible with the wide range of opportunities (Sampson and Ellis, 2019).

Eskandari et al. (2020: 125-132) stated in their study that seafarers' mental health is closely related to their job performance. They aimed to identify cognitive emotion regulation strategies to reduce depression and anxiety in Iranian seafarers. They concluded that cognitive emotion regulation strategies (self-blame, other blame, rumination, and destructive thinking) trigger depression and anxiety in Iranian seafarers (Eskandari et al. 2020: 125-132).

The COVID-19 pandemic has affected the whole world. It has psychologically, sociologically, and economically affected workers on land and seafarers working at sea. Some organizations (such as IMO, ILO) and companies should reduce the impact of the Covid-19 pandemic on seafarers. These are respectively; Infection testing, masks, and disinfection materials are some of the requirements before getting on or off the ship. Also, a psychologist may be recommended for seafarers due to this epidemic. Thus, seafarers' resistance to stress can be increased (Pesel et al. 2020: 184-190).

The first concept considered in the maritime industry is safety. However, despite the importance of safety, ship accidents are serious, as seen in various studies. Besides, the human factor is the biggest in ship accidents. Seafarers' psychological health and stress management status is critical in this context. If seafarers can manage stress, there will be improvements in sea safety (Nurcholis and Qurniawati, 2020: 137-149).

There are often inconsistencies in seafarers' rest hours. However, seafarers work at a set clock to avoid penalties or investigations in case of any inspection. In this case, it offers seafarers unfavorable working conditions. Moreover, these working environments and conditions have been brought psychological pressure on seafarers. As a result, this pressure environment will bring restlessness and mental fatigue to seafarers (Baumler et al. 2020: 1-10).

## **4. METHODOLOGY**

### **4.1. Aim of the Study**

This study is carried out on a cross-sectional study to examine the Beck Depression Scale (BDS) and the world health organization's quality of life form with different demographic data on the health-related depression levels and quality of life affected by seafarers working in the international and near-coastal voyage. It is examined whether it is related to different demographic data such as marital status, age, time spent on board, childhood status, habit (addiction), maritime experience, type of ship and cargo, voyage type, and income status for international and near road separation. If there is an interest, it is made to examine the extent of this interest.

## **4.2. Data Collection and Sample Space**

In this study, a demographic questionnaire form is used as a data collection tool. Besides, demographic information is created in the survey questions such as age, time spent on board, marital status, child-bearing status, habit, maritime experience, last mission on board, type of work and tonnage, voyage, and income status for separation of international and near roads. This form is also used in the study.

The “Beck Depression Scale,” which is used in the data collection phase of the study and determined the depression levels by examining the depression levels by the worker and defined as a result of the literature study, is used to explore the health aspect of the participating seafarers. “World Health Organization Quality of Life Scale- Short Form” is used for quality of life, and “Demographic Information Form” is used for personal information.

The Beck Depression Scale, developed by Beck in 1961, measures the emotional, mental, and motivational symptoms that are revealed in the depression experienced by individuals. Each item determines a behavioral feature related to depression (Beck, 1961: 561-571; Kaya et al. 2007: 37-46). On a 21-item scale questioning depressive symptoms adapted to Turkish by Tegin, the person is asked to state, "the sentence that best describes how he/she felt today and in the past week." Each item has four options and scores between 0 and 3. The lowest score obtained from the scale is 0, and the highest score is 63. A score of 17 or above on the Beck Depression Scale shows a risk of depression in the individual and is determined by assessing that he is moderately depressed. If the score is between 0-9, it is thought that the man of the ship has minimal depression, 10-16 points are mild depression, 17-24 points are moderate depression, 25 and above are severe depressive symptoms. The purpose of the scale, which is frequently used in psychiatric studies, is not to diagnose depression but to objectively evaluate the degree of depression symptoms on numerical values (Beck, 1961: 561-571; Hisli, 1989: 3-13; Tegin, 1990: 51-63).

In Beck's (1961: 561-571) study, the reliability coefficient (Cronbach's alpha) is found as .86. In various studies, it is also observed that different types of reliability coefficients ranged between .60 and .87 (Beck, 1961: 561-571). Hisli carries out the validity and reliability study of the scale in Turkish, and it is stated that it could be used to measure the symptoms of depression. The Quality-of-Life Scale, which has a broad scale feature and provides wide-angle measurement, consists of Short

Form-36 items. It was developed and put into use by Rand Corporation in 1992. While developing the scale, it is aimed to have a short, easy to apply, and wide usage area. In the studies that started with 149 items in 1990 and performed on more than 22000 people, firstly, factor analysis with 20-item format, Life Quality Scale Short Form-20 is prepared. However, the Quality-of-Life Scale Short Form-36 is created by rising to 36 items to increase the psychometric properties and scope. The Quality-of-life short form is a self-assessment scale. It can be filled in as little as five minutes, and it is used to evaluate the positive and negative aspects of health status. The scale allows to measure 4 dimensions; the sum of physical health (1, 2, 3, 4, 10, 15, 16, 17, 18) items, the sum of psychological health (5, 6, 7, 11, 19, 26, 27) items, social relations (20, 21) items, and environmental (8, 9, 12, 13, 14, 23, 24, 25) items (Beck, 1961: 561-571; Hisli, 1989: 3-13).

August 2018 data (T.C. The Ministry of Transportation and Infrastructure, 2018: 469), the number of actual working as seafarers in Turkey, 47 310 Total 118 539 Officers and crew members, including the number of 71 229 units. Among the determined number, seafarers work in coastal and international roads, in fishing boats and harbors, and do not perform their profession with the seafarers' qualifications. For this reason, the number of universes belonging to seafarers working at international and near-coastal voyages could not be determined precisely. Instead of purposeful sampling, one of the deterministic sampling methods is used (Kurtulus, 1998).

In this study, 235 seafarers are surveyed to determine the reasons for the relationship between health and quality of life in seafarers in the nine months between April / December 2019. The seafarers are reached via e-mail and communication tools. In determining the sample size, considering the number of seafarers in the area within the 5% confidence interval and the margin of error, this will represent the study's universe.

### **4.3. Data Analysis**

In the study data statistical analysis section, descriptive statistics, confidence test, standard deviation, correlation analysis, and parametric data transactions are made using the SPSS v25 (Statistics for Social Sciences) package program. Data are generally not distributed in data analysis. Considering the results given by the distributions of the Beck Depression Scale (1989) and World Health Organization Quality of Life-Short Form scales sub-dimensions, there are differences between the two

groups. The differences between these two groups are tried to be concluded with two different analyzes. The first is the Mann-Whitney U Test. The second analysis used is the Kruskal Wallis H-Test chi-square analysis for more than two groups and for comparisons between non-parametric groups. Seafarers are divided according to demographic variables, quality of life, and risk status in their depression levels in examining the relationship between health-related depression levels. In addition, correlation analysis and regression analysis are used to determine the differences between groups (Kalaycı, 2009).

Correlation relationships between dependent and independent variables are evaluated according to the criteria specified in Table 1.

**Table 1:** Correlation Relationships Between Dependent and Independent Variables

<b>R</b>	<b>Relationship</b>
0,00-0,25	Too weak
0,26-0,49	Weak
0,50-0,69	Medium
0,70-0,89	High
0,90-1,00	Very High

Findings are obtained from the study are evaluated at a 95% confidence interval and a 5% significance level. The data of the scales applied in the study are analyzed using SPSS v25 reliability analysis, to what extent the data is random. The reliability scale made shows how much the sample selected to represent the population represents the population. The results' reliability is shown numerically as Cronbach's Alpha ( $\alpha$ ) and is evaluated accordingly (Kalaycı, 2009).

**a value:**

$0,00 \leq \alpha < 0,40$	as for that	Not safe
$0,40 \leq \alpha < 0,60$	as for that	Low reliability
$0,60 \leq \alpha < 0,80$	as for that	Quite reliable
$0,80 \leq \alpha \leq 1,00$	as for that	It is highly reliable.

In Table 2, the reliability values (Cronbach's Alpha ( $\alpha$ )) of the working group seafarers' Beck Depression Scale and World Health Organization Quality of Life scale are found high. It is found adequate for this study at the scale level.



**Table 2:** Reliability Table Values.

	<b>Cronbach's Alpha (<math>\alpha</math>) Value</b>	<b>Number of Questions</b>	<b>The number of participants</b>
<b>BDS</b>	,731	21	235
<b>WHOQOL</b>	,969	27	235

## 5. RESULTS and DISCUSSIONS

According to the descriptive statistics in Table 3; While the participants' marital status is 34.5% married, 65.5% never married. The high singles rate is remarkable and can be interpreted as effective by staying away from the family establishment. When looking at age groups, 38.3% are 20-24 years old, 25-29 is 24.3%, and those over 30 years old are in 37.4%. The type of ship in which the seafarers' work includes 20.9% dry cargo class, 30.2% in the tanker class, 15.3% in Ro-Ro type ship, 33.6% in Cruise, and other class ship types.

**Table 3:** Frequency Distributions

		<b>Frequency</b>	<b>Percent</b>
<b>Marital status</b>	The married	81	34.5
	Never married	154	65.5
<b>Age</b>	20-24	90	38.3
	25-29	57	24.3
	30-34	44	18.7
	35 and over	44	18.7
<b>Ship Type</b>	Dry cargo	49	20.9
	Tanker	71	30.2
	Roll-on Roll-off	36	15.3
	Cruise	32	13.6
	Other	47	20.0
<b>Ship Tonnage</b>	Under 500 gross tonnage	17	7.2
	501-1000 gross tonnage	26	11.1
	1001-3000 gross tonnage	37	15.7
	3001-10000 gross tonnage	86	36.6
	10001 gross tonnage and above	69	29.4
<b>Time onboard</b>	1 week	36	15.3
	1-2 weeks	45	19.1
	More than 2 weeks	55	23.4
	I am not	99	42.1

**Table 3:** Frequency Distributions (Cont.)

		<b>Frequency</b>	<b>Percent</b>
<b>Child status</b>	Exist	34	14.5
	Non-exist	201	85.5
<b>Habit (smoking, alcohol)</b>	Yes	182	77.4
	No	53	22.6
<b>Maritime Experience</b>	0-1 Years	72	30.6
	1-2 Years	53	22.6
	3-6 Years	42	17.9
	7-10 Years	41	17.4
	11 Years and over	27	11.5
<b>Monthly Income</b>	2324 TL and below	34	14.5
	2020-5000 TL	67	28.5
	5001-10000 TL	64	27.2
	10001-20000 TL	45	19.1
	20001 TL and above	25	10.6
<b>General</b>	<b>Total</b>	235	100.0

The time of the seafarers to be onboard can be listed as follows: 15.3% for one week, 19.1% for 1-2 weeks, 23.4% for more than two weeks. Besides, 42.1% of seafarers are stated that they are not on board now. Considering the situation of having children, 14.5% have children, and 85.5% seem to have no children. According to addiction status, 77.4% have an addiction, 22.6% is stated that there is no substance they use. The experience of the seafarers participating in the survey is 0-1 years with a maximum of 30.6%, while others are listed as follows: 22.6% with 1-2 years, 17.9% with 3-6 years, 17.4% with 7-10 years and 11.5% has 11 years and above experience. 14.5% of the monthly income of seafarers is below the minimum wage of 2020. Others are as follows: 28.5% between 2020-5000 TL, 27.2% between 5001-10000 TL, 19.1% between 10001-20000 TL and 10.6% to 20001 TL and above.

According to Table 4, 10.2% of the study survey participants are Trainees, 8.1% are Sailors, 7.2% are 2. Engineers, 5.5% are Master, and 5.1% are Oiler.

**Table 4:** Findings Regarding the Distribution of Duties of Seafarers

	<b>Frequency</b>	<b>%</b>
<b>Second Engineer</b>	17	7.2
<b>Chief Officer</b>	4	1.7
<b>Third Officer</b>	18	7.7
<b>Third Engineer</b>	16	6.8
<b>Fourth Engineer</b>	10	4.3
<b>Watch Officer</b>	9	3.8
<b>Cook</b>	15	6.4
<b>Chief Engineer</b>	16	6.8
<b>Electrical Officer</b>	16	6.8
<b>Fitter</b>	16	6.8
<b>Seaman</b>	19	8.1
<b>Steward</b>	15	6.4
<b>Master</b>	13	5.5
<b>Deck Cadet</b>	13	5.5
<b>Engine Cadet</b>	11	4.7
<b>Able Seaman</b>	15	6.4
<b>Oiler</b>	12	5.1
<b>Total</b>	235	100.0

According to Table 5, the types of voyages made by the seafarers participating in the survey are given. A seafarer who has the type of international voyage covers 35.7%, and a seafarer who is on the kind of near-coastal voyage includes 64.3%.

**Table 5:** Findings Regarding the Voyage Type of Seafarers

<b>Voyage Type</b>	Near coastal voyage	151	64.3
		International voyage	84

According to the average scores in Table 6; the mean score of the BDS scale of seafarers is 32.32; The mean score for minimal depression is 6.71, mild depression is 13.50, moderate depression is 21.57, and severe depression score is 34.61. WHOQOL-BREF-TR physical health 19.95, psychological health 20.05, social relations 11.06, environmental health 24.96; risk of depression ( $BDE \geq 17$ ) is determined as 95%.

**Table 6:** Average Scores of Seafarers Participating in The Study from the BDS and WHOQOL-BREF-TR Scales

	<b>Points Range that Can be Taken</b>	<b>Points (Average)<math>\bar{x}</math></b>	<b>Standard Deviation</b>
<b>BDS (General) Depression Level</b>	0-63	32,32	9,126
<b>Minimal Depression</b>	0-9	6,71	1,604
<b>Mild Depression</b>	10-16	13,50	3,536
<b>Moderate Depression</b>	17-24	21,57	2,273
<b>Severe Depression</b>	25-63	34,61	7,132
<b>WHOQOL-BREF-TR</b>			
<b>Physical health</b>	12-28	19,95	4,021
<b>Psychological health</b>	12-28	20,05	4,160
<b>Social relations</b>	7-15	11,06	2,018
<b>Environmental health</b>	17-37	24,96	5,136

When looking at the relationship between age groups and the Beck Depression Scale in Table 7, there is no significant difference in the level of depression depending on age. However, it says that the quality-of-life scale differs significantly depending on age ( $p < 0.05$ ). It can be deduced that age is not effective in depression but effective in quality of life. In Table 6, he is stated that seafarers between the ages of 30-34 affect their physical and psychological health more than younger ones with an average of 21.89. It is thought that 30-34-year-old seafarers need to allocate more time to their families regarding environmental health. Their social environment affects the life of the ship environment compared to other ages.

**Table 7:** Relationship of Age Status with BDS and WHOQOL Kruskal-Wallis H Test

			N	$\bar{x}$	Df	Chi Square ( $\chi^2$ )	P
<b>BDS (General)</b>		20-24	90	33,57	3	2,260	,520
		25-29	57	31,89			
		30-34	44	31,07			
		35 and over	44	31,57			
<b>WHOQOL</b>	Physical Health	20-24	90	19,42	3	12,343	,006*
		25-29	57	19,65			
		30-34	44	21,89			
		35 and over	44	19,95			
	Psychological Health	20-24	90	19,42	3	12,343	,006*
		25-29	57	19,65			
		30-34	44	21,89			
		35 and over	44	19,95			
	Social relations	20-24	90	11,36	3	11,711	,008*
		25-29	57	10,88			
		30-34	44	11,57			
		35 and over	44	11,06			
	Environmental Health	20-24	90	25,48	3	13,432	,004*
		25-29	57	24,51			
		30-34	44	26,61			
		35 and over	44	24,96			

\*p&lt;0.05

According to Table 8, when the relationship between the seafarers are spent at the workplace, and the Beck Depression Scale relationship is examined, it is determined that there is a significant relationship between moderate and severe depression ( $p < 0.05$ ). The depression levels of seafarers who are not on board can be seen as being deprived of work. According to Table 8, it is revealed that the crew, who had been on board for 1-2 weeks in terms of quality of life, is more affected by the quality of life in the physical and psychological health situation, while the officers revealed that they are experienced family-work conflict more than the crew class. The reason for seafarers to experience more intense depression may be low wages. Also, depending on this, they can be shown to stay away from their families by working on the ship for a longer time. As the officer

class works for higher wages, the time between the two contracts is longer, so they can spend more time with their families. Therefore, it says that they cannot provide the desired efficiency in their work.

**Table 8:** Relationship Between Time Spent Status on Board with BDS and WHOQOL Kruskal-Wallis H Test

			N	$\bar{x}$	Df	Chi Square (x <sup>2</sup> )	P
<b>BDS (Sub-dimensions)</b>	Moderate	1 week	3	23,67	3	8,087	,044*
		1-2 weeks	2	23,50			
		More than 2 weeks	7	22,00			
		I am not	11	20,36			
	Severe	1 week	33	31,70	3	12,714	,005*
		1-2 weeks	43	32,16			
		More than 2 weeks	47	34,66			
		I am not	80	37,10			
<b>WHOQOL</b>	Physical Health	1 week	36	20,50	3	7,973	,047*
		1-2 weeks	45	20,93			
		More than 2 weeks	55	20,31			
		I am not	99	19,10			
	Psychological Health	1 week	36	20,50	3	7,973	,047*
		1-2 weeks	45	20,93			
		More than 2 weeks	55	20,31			
		I am not	99	19,10			

\*p<0,05

According to Table 9, when the relationship between habit status and Beck depression level is examined, it is found that there is a significant relationship between individuals with severe depression and habit status depending on habit status (p<0.05). It is observed that seafarers without habits have low depression effects. Those with habits have higher

perceptions that they tend to depression at a higher level than other individuals. In this case, it also increases the perception that seafarers with different substance habits such as cigarettes and alcohol have more family problems.

**Table 9:** Relationship Between Dependence Status with BDS Mann Whitney U Test

		Habit Status	N	$\bar{x}$	U	Z	P
<b>BDS</b>	<b>SEVERE</b>	Yes	158	34,15	2831,500	-	,037*
		No	45	36,24			
*p<0,05							

According to Table 10, when the relationship between nautical experience quality of life and Beck depression level is examined, it is determined that it affects moderate depression and there is a significant relationship depending on experience ( $p < 0.05$ ). It is observed that the depression levels of the seafarers who have just started the profession and spent a certain period have increased. The maritime experiences that affect their quality of life appear to affect seafarers' physical and psychological health as their experience increases. This can be said to arise from the fact that both physical and mental disorders deplete seafarers over time.

**Table 10:** Relationship Between Maritime Experience with BDS and WHOQOL Kruskal-Wallis H Test

			N	$\bar{x}$	Df	Chi-Square ( $\chi^2$ )	P
<b>BDS</b>	Moderate	0-1 Years	9	19,78	3	13,218	,004*
		1-2 Years	9	23,11			
		3-6 Years	2	20,00			
		7-10 Years	3	23,33			
		11 Years and over	9	21,57			
<b>WHOQOL</b>	Physical Health	0-1 Years	72	18,71	3	12,343	,006*
		1-2 Years	53	20,19			
		3-6 Years	42	20,74			
		7-10 Years	41	20,37			
		11 Years and over	27	20,93			
	Psychological Health	0-1 Years	72	18,71	3	12,343	,006*
		1-2 Years	53	20,19			
		3-6 Years	42	20,74			
		7-10 Years	41	20,37			
		11 Years and over	27	20,93			

\* p<0,05



According to Table 11, when the relationship between monthly income status and quality of life and Beck depression level is examined, it is found that depending on income status, depression does not affect, but the quality of life is significant in terms of social relations ( $p < 0.05$ ). It is seen that those with low income in terms of quality of life are affected by social relations. This may be because they could not show sociality due to their income status and also, to limit their communication with their environment.

**Table 11:** Relationship Between Monthly Income Status with WHOQOL  
Kruskal-Wallis H Test

			N	$\bar{x}$	df	Chi-Square ( $\chi^2$ )	P
WHOQOL	Social Relations	Less than the Minimum Wage (2324 TL)	34	11,35	4	9,853	0,043*
		2020-5000 TL	67	11,34			
		5001-10000 TL	64	11,23			
		10001-20000 TL	45	10,24			
		20001 TL and over	25	10,92			
* $p < 0,05$							

According to table 12, when the relationship of the voyage type situation's Beck Depression Scale is examined, depending upon the people who make an international voyage is contained, it shows up depression strongly and has a specific relationship ( $p < 0,05$ ).

**Table 12:** Relationship Between Expedition Type with BDS Mann Whitney U Test

			N	$\bar{x}$	U	Z	P
<b>BDS</b>	<b>SEVERE</b>	Near coastal voyage, (the Black Sea, Mediterranean, Red Sea by overcoming cabotage)	135	33,52	3534,000	-2,678	0,007*
		International (by crossing the Near coastal voyage)	68	36,78			
* p<0,05							

As a result of the correlation analysis, a weak negative relationship is found between WHOQOL-BREF-TR and BDS (p<0.001) (Table 13). This situation can be interpreted as decreasing depression if the physical and psychological health dimensions of life quality increase in the participants.

**Table 13:** Correlation Analysis of BDS and WHOQOL-BREF-TR Scales of Seafarers Participating in The Study

<b>BDS (Depression Level)</b>		
<b>Physical Health</b>	R	-,218
	P	,001**
<b>Psychological Health</b>	R	-,218
	P	,001**
<b>Social Relations</b>	R	,045
	P	,496
<b>Environmental Health</b>	R	-,023
	P	,731
* Pearson correlation analysis, ** p <0.00 significant		

In Table 14, when looking at the sub-dimensions of the regression analysis results, a significant effect of the level of health-related depression on the quality of life at the level of 30 % and related to the quality-of-life sub-dimensions, it is harmful in physical and psychological health, positive in terms of social relations, and negative in environmental health. There is a statistically significant relationship (p <0.05).

**Table 14:** Regression Analysis of BDS and WHOQOL-BREF-TR Scales of Seafarers Participating in The Study

	<b>B</b>	<b>P (Sub-dimensions)</b>	<b>F</b>	<b>r<sup>2</sup></b>	<b>P(model)</b>
<b>Physical Health</b>	-,817	,002**	33,567	0,304	,000*
<b>Psychological Health</b>	-,817	,002**			
<b>Social Relations</b>	6,289	,000**			
<b>Environmental Health</b>	-1,946	,000**			

## 6. CONCLUSIONS

This study investigates the effects of seafarers' international and near-coastal voyage work on health depression levels and quality of life. The results obtained in the research are stated below.

In the study, variables such as marital status, age, weight, height, time spent on board, having children, habit, maritime experience, working ship type and tonnage, voyage type, and income status for international and near-coastal voyage separation have an important role in the quality of life, and it is determined that these variables are helpful.

In line with these variables, employees should be able to deal effectively with their work stress and their communication problems and take necessary precautions at the organizational level. It is recommended to regularly go to the health programs and organize health programs to reduce depression, improve their quality of life, and deal with problems around them. Also, due to the difficulty of reaching seafarers in the study, definitive conclusions could not be reached. For this reason, it should be studied with different demographic factors by taking into account other variables that may affect the quality of life, such as international and near coastal expedition types. It would be useful to carry out a similar multicenter study to cover all seafarers and use different communication channels. Some duty classes renew their contracts at long intervals because they work with higher wages due to their location and experience. They can spend more time with their families and, therefore, cannot achieve the desired efficiency in their work.

When the relationship between the seafarer expedition type and Beck Depression Scale is examined, it is determined that there is a significant relationship. According to Table 12, when the relation of expedition type status to the Beck Depression Scale is examined, it is determined that oceangoing seafarers appeared violently at the levels of depression from near coastal seafarers. Seafarers generally do not prefer remote routes. It is thought that their preference for near-road voyages depends on the level of depression. When the relationship between marital status and conflict scale is examined, it is determined that there is no significant relationship between work-family and family-work conflict depending on marital status.

The perception of depression levels of seafarers varies depending on the working environment and pace. The seafarers' perception levels increase because they are away from their families and cannot be with their families in case of need or an emergency. At the same time, their single circle is the ship's employees and affects each other. For this reason, there is a negative impact on seafarers' performances.

Although almost every ship has advanced communication tools (internet and satellite phones, etc.), communication difficulties are also often a problem in international voyages. Adequate use and use of these communication tools will reduce depression levels and positively affect the quality of life of the seafarer. Thus, all seafarers will have the opportunity to communicate with their surroundings and meet with their families when they cannot spend time with their families.

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