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**Ugurlu, O, Yildiz, S, Aydin, M, Aydin, T, Kaptan, M and Wang, J (2020)
Analysis of occupational burnout utilising Maslach inventory: a case study of Turkish male seafarers. Maritime Policy and Management. ISSN 0308-8839**

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Analysis of Occupational Burnout Utilising Maslach Inventory: A Case Study of Turkish Male Seafarers

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ABSTRACT

This study examined the relationship between seafarers' levels of occupational burnout and demographic characteristics. Within the scope of the study, a survey was conducted with 303 male Turkish seafarers. Using the Maslach Burnout Inventory, seafarers' burnout levels were examined in three dimensions: emotional exhaustion, depersonalisation, and personal accomplishment. According to the results, there was no statistically significant difference between the three burnout levels and seafarers' age, the status of having children, education, the type of duty on the ship, the total working time, and monthly income. On the other hand, there was a statistically significant difference between the depersonalisation scores and marital status and personal accomplishment scores by ship type. The results indicate that the demographic characteristics of seafarers have a very limited impact on occupational burnout. The emotional exhaustion score was 47.51%, the depersonalisation score was 42.48%, and the personal accomplishment score was 45.43%. There may be many reasons for this, but the most likely is that the profession creates a serious burnout for everyone, regardless of their educational status, monthly income and marital status.

Keywords: Seafarers, Maslach burnout, occupational burnout, occupational continuity, working conditions

1. Introduction

1,647,500 seafarers are estimated to work at sea worldwide (ILO 2015). UNCTAD (2019) expects international maritime trade to expand at an average annual growth rate of 3.5% over the 2019–2024 period. Given the sectoral trends and fleet growth rate, the importance of human resources will continue to increase as more employment will be required to feed the gradually growing fleet (Bates 2014). Maritime employment has characteristics that mental, psychosocial, and physical stress factors predominate when compared to other occupational groups onshore (Chung, Lee and Lee, 2017; Oldenburg, Baur, and Schlaich 2010). One of the main problems in maritime transportation in terms of employment is occupational continuity (IMO 2011; Uğurlu 2015b; Yıldız, Uğurlu, and Yüksekıldız 2016). Burnout is a long-term feeling of tiredness, desperation, and hopelessness due to exposure to intense emotional demands as a consequence of the job and having to constantly work face-to-face with other people (Maslach and Jackson, 1981). Burnout causes individuals to have lower performance both qualitatively and quantitatively in business life (Maslach, Schaufeli, and Leiter 2001). Depending on the profession group, factors that trigger burnout include individuals' dislike of their profession, negative relationships with supervisors and other employees, insufficient salary, and occupational stress (Weinborn et al. 2019; El Helou, Nabhani, and Bahous 2016). The maritime profession is associated with many negative situations such as long voyages, homesickness, inappropriate working hours, being in the same social environment for a long time, insufficient social facilities on the ship, sleep disorder, sound-vibration, fatigue, and pirate threats (Kum and Boşnak, 2016; Oldenburg, Baur, and Schlaich 2010; Slišković and Penezić 2015; Uğurlu 2015a). The issues seafarers face while maintaining their profession may negatively affect their occupational burnout.

Professions containing many difficulties make the concept of occupational profile and balance very important for burnout. An occupational profile is a summary of professional

background, experience, daily routines, interest areas, and needs. On the other hand, occupational balance is one of the fundamental principles of occupational therapy. This expresses the optimum work balance. It is aimed for individuals to be in balance with their daily life, leisure time, and production-based activities. These concepts are very important for examining burnout, understanding it correctly, and revealing the profile (Huri et al. 2016; Huri et al. 2017).

Sustainable and safe maritime transport is possible with qualified seafarers. To improve quality standards, seafarers' occupational continuity should be ensured together with education and training. Occupational continuity in maritime areas is very low compared to other occupations (Paukstat, 2017; Uğurlu 2015a). Burnout is one of the major threats to the occupational continuity (Chung, Lee and Lee, 2017;; Oldenburg et al., 2013; Wu et al., 2014). For this reason, conducting studies to examine occupational burnout is an extremely important and sensitive issue for all parties of the maritime industry. This study determined negative behaviours causing occupational burnout of Turkish male seafarers, and examined the relationship between these behaviours, working conditions and employees' socio-demographic characteristics. The results can serve as a reference for maritime authorities (port state, flag state, *etc.*) and international organisations (ILO, IMO, *etc.*) in determining new regulations to improve the working conditions of seafarers. Identifying the factors that cause burnout and adopting maritime policies to prevent them is an important issue that concerns all parties of maritime transport.

Perlman and Hartman's (1982) burnout model and the Maslach Burnout Model (1981) are two important models on burnout. Other accepted models include the Cherniss Burnout Model (1980), and Edelwich and Brodsky's (1980), Pines' (1993), Scott Meier's (1984), Suran and Sheridan's (1985), and Leiter's (1985) burnout models. Maslach's approach is widely used in the literature. One of the most significant contributions of this approach is that it deals with

occupational burnout not only conceptually but also as a process (Aboagye et al. 2018; Szigeti et al. 2017; Valero-Chillerón et al. 2019). Therefore, the Maslach burnout model was preferred in this study.

Maslach (2003) addressed the concept of burnout in three dimensions: emotional exhaustion, depersonalisation, and low sense of personal accomplishment. Emotional exhaustion is a sense of spiritual wear due to communication with other people (Maslach and Goldberg 1998). Depersonalisation occurs when an individual has negative feelings towards people whom they serve or work with, and acts indifferently towards them (Fabio et al. 2019). A low sense of personal accomplishment is a decrease in the sense of achievement as a result of the individual's negative feelings towards work (Chuang et al. 2011). These three dimensions come together in a certain process and cause individuals to display symptoms of burnout syndrome.

Among these three dimensions of burnout, emotional exhaustion is the most reported and analysed (Montero-Marin et al. 2014). This is manifested by the consumption of the individual's emotional resources first (Carter, 2005). Depersonalisation is the most problematic aspect of burnout. When an individual limits his/her relationship with others around him/herself, depersonalisation emerges. The individual, who sees the difference between their previous positive attitudes and their current attitudes, starts to think that he or she is incompetent in terms of business and relations (Sürgevil 2006). This dimension, in which the person tends to evaluate himself or herself negatively, is defined as a reduction in personal accomplishment (Maslach, 2003).

2. Occupational Burnout in Maritime Literature

Negative working conditions of seafarers are among the most frequently studied topics in

maritime literature. In the study conducted by Jeżewska et al. (2006) on 30 maritime students and 30 seamen, the most common psychosocial stress factors were found as monotony, attention loss, excessive or insufficient responsibility, staying away from the family, constantly changing environment, responsibility arising from the safety of the personnel, and making difficult decisions. As a result, psychiatric problems such as burnout, depression, and alcohol addiction may occur. In the study, it was stated that maritime students were more vulnerable and weaker than officers in terms of coping with stress.

Oldenburg et al. (2010) in their study based on a literature review and opinions of maritime experts emphasised that shipping is a stressful occupation group due to the threats it contains. The most dangerous situations related to the work onboard are unsafe practices, toxic substances, psychological stress, and lifestyle risks. In addition, the study suggests that increased fatigue and individual isolation will have negative consequences for the employee due to family disability, long and often irregular work, and communication problems with employees of different nationalities.

Oldenburg et al. (2013) investigated the burnout status of 251 seafarers working on commercial ships. They used the Maslach Burnout Inventory consisting of 22 questions to determine the level of emotional burnout of seafarers and performed a statistical analysis of the survey results using multiple logistic regression. They found that there are many psychological factors that trigger burnout, and the burnout risk of seafarers is moderate compared to most land-based occupations. They argued that seafarers' burnout levels would be reduced with improvements in increased sleep hours, reduced working hours, leadership behaviour, and communication with superiors. They stated that emotional burnout is related to the rank and job tasks a person has on the ship.

In a study of 1027 Chinese employees working on fishing vessels, Wu et al. (2014) found that the highest emotional exhaustion value is for sailors under the age of 30 and with a salary

of less than ¥10,000. The factors that most affect burnout were excessive working hours, high stress, less than 6 hours of sleep per day, and low sleep quality. It was emphasised that working times of less than 6 months and low stress or quality sleep were factors in reducing burnout. Physical exercise on the ship was found to be preventive against burnout.

Yıldız et al. (2016) conducted a questionnaire survey on 618 deck cadets, 10 maritime company officers, and 3 seafarer trainers. They statistically analysed the results using Statistical Package for the Social Sciences (SPSS) software. They examined the training conditions of deck cadets and the difficulties they faced during their training. The results revealed that 70% (n = 435) of the participants indicated that they planned to work in shipping for less than 10 years. This situation once again revealed that occupational continuity in maritime areas is low. The most important factors affecting occupational continuity were found to be distance from social life, limited communication facilities, irregularity of working rest hours, fatigue, and associated job dissatisfaction.

The results of the studies reveal that occupational burnout is a chronic and quite important problem for seafarers. The current study investigated the occupational burnout levels and reasons for Turkish male seafarers with different qualifications. The study is important in terms of examining the relationship between seafarers' working conditions and their socio-demographic characteristics by revealing their occupational burnout levels.

3. Materials and Methods

3.1. Data Collection

A questionnaire was used as a data collection tool. A total of 358 seafarers were asked to complete the questionnaire and a total of 305 seafarers, working in different positions on different ships, completed the entire questionnaire. Since there were a limited number of female

seafarers, female participants were excluded and the final data set was limited to 303 Turkish male seafarers. To ensure homogeneity, participants were selected from those at the largest ports in Turkey (Trabzon, Samsun, Izmir, Istanbul, Izmit, Mersin, and Antalya). Data was collected via face-to-face questionnaires or those delivered to personnel working on different ships via e-mail or mail. The research data was collected over a 2-year period and feedback was provided voluntarily.

The questionnaire consists of two parts. In the first part, socio-demographic information associated with parental status, marital status, childbearing status, duty of the ship, years of duty on the ship, type of ship involved, and monthly income status, was collected. The second part used the Maslach Burnout Inventory (Table 1), which is widely used and includes 22 statements evaluated on a five-point Likert scale. The emotional exhaustion, depersonalisation, and personal accomplishment of the seafarers were examined. The socio-demographic characteristics were examined in three dimensions, focusing on the relationship between the burnout levels of emotional exhaustion, depersonalisation, and personal accomplishment. Studies based on the relationship between occupational burnout and socio-demographic characteristics in the literature were taken as the basis when developing the following research questions (Garrosa et al. 2008; Ahola et al. 2006; Tarcan et al. 2017; Mikolajczak et al. 2018).

- (1) Is there a difference between the levels of occupational burnout and seafarers' age?
- (2) Is there a difference between the levels of occupational burnout and seafarers' marital status?
- (3) Is there a difference between the levels of occupational burnout and seafarers' parental status?
- (4) Is there a difference between the levels of occupational burnout and seafarers' education level?

- (5) Is there a difference between the levels of occupational burnout and seafarer's rank onboard?
- (6) Is there a difference between levels of occupational burnout and seafarers' onboard service time?
- (7) Is there a difference between the levels of occupational burnout and the type of ship?
- (8) Is there a difference between levels of occupational burnout and seafarers' salary?

Table 1. Maslach burnout inventory

3.2. Study Population

To determine the socio-demographic characteristics of the participants, seafarers were asked about their age, marital status, parental status, rank onboard, onboard working duration, type of ship worked, and monthly income (Table 2).

Table 2. Socio-demographic characteristics of seafarers

Examination of the socio-demographic characteristics of the participants revealed that 92.6% of them were 65 years old or younger. When parental status (having a child) and marital status distribution are evaluated together, 84.42% of married seafarers have children. In terms of the distribution of participants by their duties on the ship 6.27% are masters, 46.86% officers, 2.31% assistant officers, 6.93% cadets, 30.69% ratings, and 6.93% cabin crew. The task distribution data indicates that the research sample represents the research universe well because the percentages of the distribution on a ship are close to these values on average. In total, 71.5% of the participants had worked onboard for 12 years or less and 28.5% had worked onboard for more than 12 years. There is a homogeneous distribution in terms of the seniority

values of employees. Therefore, the research sample represents all age groups. This shows that sampling was successful in the study. In total, 56.4% of the participants stated that they worked on dry-bulk cargo ships, 22.8% on tankers, 7.6% on container ships, 12.5% on Ro-Ro/Ro-Pax ships, and 0.7% on other types of ships. Considering the ship type, the number of ships in the sea trade fleet, and deadweight capability, the sample order (by type) is in line with the number of ships in the trade fleet. A total of 17.5% of participants have a monthly income lower than \$854, 25.7% between \$854 and \$1282, 14.5% between \$1283 and \$1708, 10.9% between \$1709 and \$2135 and 31.4% more than \$2135. The salary scale is in line with the participants' ranks onboard.

3.3. Statistical Analysis

Data was analysed using SPSS 22.0, with a significance level of 0.05, and a 95% confidence interval (IBM 2013). Frequency analysis was used to analyse nonparametric data. Before the analysis of the differences, a Kolmogorov–Smirnov test was carried out to test the compatibility of the distribution of the data with the normal distribution. Since the scale averages did not show a normal distribution, the Mann–Whitney-U test was implemented for binary groups and Kruskal Wallis tests were used for more than two groups to analyse the difference in nonparametric data.

4. Reliability Analysis of the Research Scale

Reliability analysis of the scale was conducted, and Cronbach's alpha coefficient (α) was found to be 0.840 ($F(21, 302) = 26.833$, $p = 0.000$), which indicates that the scale is very reliable. The three-factor reliability values were calculated as follows: Emotional Exhaustion $\alpha = 0.861$ ($F(8, 302) = 56.34$, $p = 0.000$), depersonalisation $\alpha = 0.673$ ($F(4, 302) = 93.05$, $p = 0.000$), and

Personal Accomplishment $\alpha = 0.823$ ($F(7, 302) = 15.47, p = 0.000$). The internal consistency coefficient of the (Cronbach's Alpha) emotional exhaustion subscale was 0.861, depersonalization subscale was 0.673, and personal accomplishment subscale was 0.823. These values are greater than 0.600, which is within the acceptable limits of the social sciences (Gliem and Gliem 2003; Santos 1999).

5. Findings

Questions 1, 2, 3, 6, 8, 13, 14, 16 and 20 measure emotional exhaustion. Questions 5, 10, 11, 15 and 22 measure depersonalization. Questions 4, 7, 9, 12, 17, 18, 19 and 21 measure personal accomplishment (Maslach and Jackson 1981; Oldenburg, Jensen, and Wegner 2013; Polikandrioti 2009) (Table 1). The interpretation of the questions in the Maslach linear scale according to the equivalence of points is presented in Table 3. The degree of support of the participants to the statements given in the study consists of 5 items with response options between 1 (Never) and 5 (Always). The average score of the answers given to the questions according to the Maslach scale is interpreted from the "comment" section in the rightmost column of Table 3. For example, if the average score of the participants for the answers given to the questions is between 1.00-1.79, the burnout level is "very low" as per the Maslach scale.

Table 3. Maslach score range

In terms of the general distribution of the responses, the average emotional exhaustion was 21.38 ± 7.52 , the depersonalisation score was 10.62 ± 4.07 , and the personal accomplishment score was 18.17 ± 6.27 . In the Maslach scale, there are nine questions about emotional exhaustion, five about depersonalisation, and eight about personal accomplishment. If each question can be awarded five points, the highest score that can be obtained will be 45, 25, and 40, respectively. When comparing the averages, it would be appropriate to compare the

scale's own values with the weighted average. Accordingly, emotional exhaustion scores are 47.51%, depersonalisation scores are 42.48%, and personal accomplishment scores are 45.43% (Table 4).

Table 4. Average and standard deviation values of responses

Nonparametric tests were preferred because the scale averages for the advanced analysis and tests did not show a normal distribution. One-way ANOVA was performed to determine whether there was a significant difference between the socio-demographic characteristics and the burnout subscales. For the detailed analysis between the groups, the Bonferroni test was preferred considering that they have the same variance. There was no significant difference in emotional exhaustion, depersonalisation, and personal accomplishment according to the age category ($F(4, 298), p > 0.05$) (Table 5).

Table 5. Occupational burnout levels and difference analysis results by age

Emotional exhaustion and depersonalisation scores were higher for single seafarers, while personal accomplishment scores were higher for married seafarers (Table 6). On the other hand, the difference between emotional exhaustion and personal accomplishment scores was statistically insignificant ($p > 0.05$), and the difference between depersonalization scores between the groups was statistically significant ($p < 0.05$). Therefore, it can be stated that marital status has a significant effect on depersonalization among seafarers, and single seafarers are closer to depersonalization.

Table 6. Occupational burnout levels and difference analysis results by marital status

When the degree of burnout of seafarers by parental status (having children) was examined, emotional exhaustion and depersonalization were found to be higher for seafarers who had children, and the personal accomplishment score was higher for those without children (Table 7). On the other hand, the results of the difference analysis show that there is no statistically significant difference between burnout levels by parental status ($p > 0.05$). Although these results are in line with the burnout of married and unmarried seafarers, both those with and without children generally have a high occupational burnout average.

Table 7. Occupational burnout levels and difference analysis results by parental status

According to the results, emotional exhaustion among seafarers is highest among graduates of vocational schools and lowest for primary school graduates. On the other hand, depersonalization is observed to be highest among high school graduates and lowest among graduates of private courses. In terms of personal accomplishment average scores, the highest personal accomplishment score is for primary school graduates and the lowest is for private course graduates (Table 8). The results of the difference analysis reveal that these differences between groups are not statistically significant ($p > 0.05$). Therefore, it can be stated that the education status of seafarers has no effect on occupational burnout.

Table 8. Occupational burnout levels and difference analysis results by education status

When the burnout averages were examined for the ranks, the emotional burnout score was found to be highest among the auxiliary officers (radio officer, electric officer, *etc.*) and lowest for auxiliary service personnel. The depersonalization score was highest for auxiliary officers and lowest for captains. The average personal sense of failure was highest among cadets and the lowest for officers (Table 9). However, the differences between the groups were not

statistically significant ($p > 0.05$). Therefore, there is no significant difference between the ranks in terms of occupational burnout.

Table 9. Occupational burnout levels and difference analysis results by rank onboard

When the average of emotional exhaustion is examined according to the total service time, the highest level of exhaustion is for seafarers with 5–8 years of professional experience, and the lowest is for those with 2 years or less of experience. The highest value of depersonalisation is for seafarers with less than 2 years of experience, and the lowest value is for those with 9–12 years of experience. The personal accomplishment score is highest for seafarers with 9–12 years of experience and lowest among those with 5–8 years of experience (Table 10). The results indicate that professional experience has no effect on occupational burnout ($p > 0.05$). Therefore, there is no significant difference between seafarers' professional experience in terms of occupational burnout.

Table 10. Occupational burnout levels and difference analysis results by total service time

When the relationship was analysed by ship type, emotional exhaustion was highest for those on bulk cargo ships and lowest for those on chemical tankers. Depersonalization was highest for those on bulk carriers and lowest for those on oil tankers. Personal accomplishment was highest in oil tanker personnel and lowest for those on chemical tankers (Table 11). The results show that the difference between the groups in terms of emotional exhaustion and depersonalisation was not significant ($p > 0.05$), but the personal accomplishment scores differ significantly between the groups ($p < 0.05$). Therefore, the type of ship on which seafarers work has an impact on the degree of personal accomplishment, which is in line with the results of Uğurlu (2015a).

Table 11. Occupational burnout levels and difference analysis results by ship type

The results of analysis by salary reveal that emotional exhaustion was highest in seafarers with a maximum monthly income of \$2,135 and lowest for those with a salary of \$854 or less. Depersonalization was mostly observed in seafarers who receive salaries of \$854 or less, and lowest in seafarers who receive salaries of \$2,135 or more. Personal accomplishment was observed in seafarers with salaries less than \$854 and, lowest in seafarers with an income of \$2,135 or more (Table 12). The results indicate that the difference between occupational burnout levels and salary groups was not statistically significant ($p > 0.05$). Therefore, the monthly income of seafarers does not have a serious effect on occupational burnout levels.

Table 12. Occupational burnout levels and difference analysis results by salary range

6. Discussion

Contrary to Jang et al. (2016), this study found no statistically significant difference between the three burnout levels and the seafarers' age, parental status, education status, type of duty on the ship, total working time, and monthly income. Regardless of the length of the ship's voyages and the rank of the seafarer, all seafarers' social lives are limited, and they are exposed to long-term loneliness; hence, there is a high degree of burnout. In other words, regardless of factors such as rank task type, socio-demographic characteristics (age, marital status, *etc.*) and monthly income level, those who work on a ship for a long time are exposed to burnout at some point.

When the burnout level is analysed for the ranks, there is no significant difference, but the greatest difference is in the officers and the assistant officers. Oldenburg and Jensen (2019) stated that deck officers had the highest psychological stress. Oldenburg et al. (2013) stated that

emotional exhaustion was highest among the cabin crew at 25%, followed by officers with 10.7%, and ratings with 4.5%. The questionnaire results in the current study are compatible with the literature in this context.

When the burnout level was analysed by the type of ship, there was no significant difference in terms of emotional exhaustion and depersonalisation, while the burnout in terms of personal accomplishment was greatest on tanker type ships. Uğurlu (2015a) provides supporting evidence that deck officers on tankers have longer working hours and irregular sleep. The risk of damage the cargo will bring to the environment and the goods, the length of their stay in the port, and the need for extreme attention during loading and unloading operations are among the factors that play a role in burnout.

The main reasons for seafarers' burnout are living and working in a socially restricted area. As stated by Yıldız et al. (2016) and Kartal et al. (2019), social restrictions faced by the seafarers during their contracts may lead them to end their seafaring life in a short period of time. It is a common problem today that seafarers end their seafaring lives in a short period of time (Uğurlu 2015a). For this reason, to reduce burnout, companies should pay more attention to working conditions. For example, cabins, wages, and working hours should be improved to enhance seafarers' feelings regarding their jobs. Although today's technology does not eliminate the separation of seafarers from loved ones, providing the unlimited and uninterrupted internet onboard for better communication will reduce their loneliness.

Another important factor influencing burnout is the mental health of seafarers. With the support of mental health professionals, psychiatrists, psychologists and occupational therapists, the mental state of seafarers should be monitored before and after each contract, and remedial interventions should be made in the light of the results. Specialists such as occupational therapists can assist seafarers in dealing with occupational burnout. Daily exercises, physical

activities or other therapy methods that can be applied on board and recommended by specialists may be beneficial for seafarers to maintain their mental health during the voyage.

7. Conclusion

This study investigated the relationship between the socio-demographic characteristics and occupational burnout levels of seafarers working on different types of ships and with different duties. The results revealed no significant difference by age for all three burnout levels. In terms of emotional burnout and personal accomplishment, there was no significant difference regarding marital status, whether they had children, level of education, their duties onboard, and total maritime service. However, significant differences were observed when these socio-demographic features were considered in terms of depersonalization. Among the burnout categories, the score for emotional exhaustion was 47.51%, depersonalisation score was 42.48%, and personal accomplishment score was 45.43% (Table 4).

Ship type was found to be a distinctive feature in all three burnout dimensions. The levels of emotional exhaustion of personnel on dry cargo ships with a long contract period compared to other ship types are high (Table 11). On the other hand, on tankers, which have an intense working pace and where employees do not have the opportunity to allocate personal time, depersonalization levels are high compared to other ship types. For Ro-Ro ships, which generally travel between the same ports, personal accomplishment levels are higher than those in other ship types.

One of the reasons seafarers' burnout levels are lower than socio-demographic changes is that each job contains a number of unique challenges and requirements. When the distribution of duties within the ship is examined, those who have many physical difficulties (ratings) are found to have relatively fewer psychological difficulties and those who have more psychological difficulties (deck-engine officers) have relatively fewer physical difficulties. Despite its low exchange rate with demography, one of the main reasons for exhaustion is

difficult working conditions onboard ships. In general, the fact that a human has been at sea for months is already a cause of burnout. In addition, the fact that these people stay away from their families, together with their limited freedom, intense and long working hours, and the presence of periodically continuing fixed frequency sounds, shortens the time to exhaustion.

The support of specialists such as occupational therapists can be obtained to combat burnout. Seafarers should feel physically and psychologically ready to work in the ship environment before boarding the ship. In addition, improving the conditions of seafarers in terms of wages, living standards, personal rights, and job safety can be considered as a solution proposal to prevent their burnout. One of the limitations of this study is the lack of female participants. Due to insufficient data, the gender relationship of seafarers' occupational burnout could not be examined. In the future, it is advisable to analyse whether all three types of burnout differ depending on the gender using a homogeneous data set. In this way, the effect of gender, which affects burnout in other professions, on seafarers will be revealed more clearly.

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Table 1. Maslach burnout inventory

Please evaluate the following statements on the scale of "1- Never, 5- Always".					
1- Never; 2- Very Rare; 3- Sometimes; 4- Most of the time; 5- Always					
1	I feel I am getting disheartened from work.	1	2	3	4 5
2	After the return of work, I feel exhausted.	1	2	3	4 5
3	When I wake up in the morning, I feel that I will not be able to take this job one more day.	1	2	3	4 5
4	I immediately understand how people I meet feel.	1	2	3	4 5
5	I realize that I treat some of my job-related people as if they were not human.	1	2	3	4 5
6	Dealing with people all day is really hard for me.	1	2	3	4 5
7	Regarding my job, I find the most appropriate solutions to people's problems.	1	2	3	4 5
8	I feel tired of the work I do.	1	2	3	4 5
9	I believe that I have contributed positively to people's lives thanks to my work.	1	2	3	4 5
10	I have been treating people harshly since I started working in this job.	1	2	3	4 5
11	I worry that this job is hardening me emotionally.	1	2	3	4 5
12	I am strong enough to accomplish many things.	1	2	3	4 5
13	I think my job restricts me.	1	2	3	4 5
14	I think I am overworked.	1	2	3	4 5
15	I don't care what happens to the people I meet in the workplace.	1	2	3	4 5
16	Working directly with people creates a lot of tension in me.	1	2	3	4 5
17	I create a comfortable environment between me and the people I meet in the workplace.	1	2	3	4 5
18	I feel alive after working closely with people	1	2	3	4 5
19	I have achieved remarkable success in this business.	1	2	3	4 5
20	I feel I am coming to the end of the road	1	2	3	4 5
21	I can successfully solve the problems I encounter in the workplace.	1	2	3	4 5
22	I feel people at work are behaving as if I created some of their problems	1	2	3	4 5

Table 2. Sociodemographic characteristics of seafarers

F	%	F	%
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Education status	Faculty (4 years)	52	17.16	Total service time	<2 years	63	21	
	Private course	20	6.60		2-4 years	38	12.8	
	High school	41	13.53		5-8 years	68	22.3	
	Vocational school	51	16.83		9-12 years	47	15.4	
	Vocational high school	50	16.50		>12 years	87	28.5	
	Middle school	52	17.16		Ship type	Dry Cargo	156	51.49
	Primary school	37	12.21			Bulk Carrier	15	4.95
Marital status	Married	154	50.83	Container		23	7.59	
	Single	149	49.17	Ro-Ro		38	12.54	
Parental status	Yes	139	45.87	Other		2	0.66	
	No	164	54.13	Chemical Tanker		53	17.49	
Rank onboard	Master	19	6.27	Oil Tanker		16	5.28	
	Officers	142	46.86	Salary scale	<\$854	53	17.49	
	Assistant officers	7	2.31		\$854-1,282	78	25.74	
	Cadet	21	6.93		\$1,283-1,708	44	14.52	
	Ratings	93	30.69		\$1,709-2,135	33	10.89	
	Cabin crew	21	6.93		>\$2,135	95	31.35	
Age	<22	13	4.29					
	22-30	103	33.99					
	31-40	95	31.35					
	41-50	54	17.82					
	>50	38	12.54					

Table 3. Maslach score range

Choices	Point	Lower-upper range	Comment
Never	1.00	1.00-1.79	Very low
Very rare	2.00	1.80-2.59	Low
Sometimes	3.00	2.60-3.39	Moderate
Most of the time	4.00	3.40-4.19	High
Always	5.00	4.20-5.00	Very high

Table 4. Average and standard deviation values of subcategories of burnout

	Lowest	Highest	X	SD	Upper limit	Percentage
Emotional Burnout	9.00	42.00	21.38	7.52	45	47.51
Depersonalization	5.00	25.00	10.62	4.07	25	42.48
Personal Accomplishment	8.00	40.00	18.17	6.27	40	45.43

Table 5. Occupational burnout levels and difference analysis results by age

	Age range	N	X	SD	X ²	p
Emotional Burnout	<22	13	18.62	7.17	4.509	0.342
	22-30	103	21.22	6.75		
	31-40	95	22.12	7.66		
	41-50	54	21.96	7.97		
	>50	38	20.08	8.57		
	Total	303	21.38	7.53		
Depersonalization	<22	13	10.54	4.68	4.060	0.398
	22-30	103	11.02	3.61		
	31-40	95	10.16	4.12		
	41-50	54	10.96	4.58		
	>50	38	10.24	4.24		
	Total	303	10.62	4.08		
Personal Accomplishment	<22	13	18.15	4.28	2.211	0.697
	22-30	103	17.29	5.34		
	31-40	95	18.78	6.57		
	41-50	54	18.74	7.12		
	>50	38	18.03	7.20		
	Total	303	18.15	6.28		

Table 6. Occupational burnout levels and difference analysis results by marital status

	Marital status	N	X	SD	U	p
Emotional Burnout	Married	154	21.06	7.89	10,604.00	0.254
	Single	149	21.71	7.14		
Depersonalization	Married	154	10.16	4.20	9,681.50	0.018
	Single	149	11.10	3.90		
Personal Accomplishment	Married	154	18.21	6.94	11,192.00	0.712
	Single	149	18.07	5.55		

Table 7. Occupational burnout levels and difference analysis results by parental status

	Parental status	N	X	SD	U	p
Emotional Burnout	Yes	139	21.27	8.09	10,915.50	0.525
	No	164	21.48	7.03		
Depersonalization	Yes	139	10.27	4.29	10,043.00	0.073
	No	164	10.92	3.87		
Personal Accomplishment	Yes	139	18.33	7.19	11,141.50	0.735
	No	164	17.99	5.42		

Table 8. Occupational burnout levels and difference analysis results by education status

	Education levels	N	X	SD	X²	p
Emotional Burnout	Faculty (4 years)	52	22.60	7.04	7.335	0.291
	Private course	20	20.10	7.19		
	High school	41	20.88	7.61		
	Vocational school	51	22.92	7.01		
	Vocational high school	50	20.78	6.83		
	Middle school	52	20.92	8.70		
	Primary school	37	20.24	8.09		
	Total	303	21.38	7.53		
Depersonalization	Faculty (4 years)	52	10.77	3.40	5.179	.521
	Private course	20	9.40	3.36		
	High school	41	11.63	4.71		
	Vocational school	51	10.43	3.70		
	Vocational high school	50	10.68	3.99		
	Middle school	52	10.87	4.98		
	Primary school	37	9.78	3.70		
	Total	303	10.62	4.08		
Personal Accomplishment	Faculty (4 years)	52	17.60	4.70	3.389	0.759
	Private course	20	17.15	6.77		
	High school	41	18.15	6.68		
	Vocational school	51	18.55	5.47		
	Vocational high school	50	17.06	5.18		
	Middle school	52	18.69	7.37		
	Primary school	37	19.59	8.12		
	Total	303	18.15	6.28		

Table 9. Occupational burnout levels and difference analysis results by rank onboard

	Rank	N	X	SD	X²	p
Emotional Burnout	Master	19	21.37	5.19	6.305	0.278
	Officer	142	22.04	7.31		
	Assistant officer	7	24.71	8.56		
	Cadet	21	20.62	7.55		
	Ratings	93	20.69	7.84		
	Cabin crew	21	19.67	8.94		
	Total	303	21.38	7.53		
Depersonalization	Master	19	9.11	2.83	9.632	0.086
	Officer	142	10.68	3.81		
	Assistant officer	7	14.43	4.54		
	Cadet	21	10.95	4.26		
	Ratings	93	10.71	4.42		
	Cabin crew	21	9.57	4.31		
	Total	303	10.62	4.08		
Personal Accomplishment	Master	19	17.84	5.90	10.097	0.073
	Officer	142	17.08	5.36		
	Assistant officer	7	19.00	3.11		
	Cadet	21	19.90	5.58		
	Ratings	93	19.61	7.74		
	Cabin crew	21	17.10	5.51		
	Total	303	18.15	6.28		

Table 10. Occupational burnout levels and difference analysis results by total service time

	Service time	N	X	SD	X²	p
Emotional Burnout	<2 years	63	19.79	6.85	4.525	0.340
	2-4 years	38	21.08	6.21		
	5-8 years	68	22.34	5.99		
	9-12 years	47	21.51	7.86		
	>12 years	87	21.84	9.20		
	Total	303	21.38	7.53		
Depersonalization	<2 years	63	11.10	4.18	3.607	0.462
	2-4 years	38	10.84	3.39		
	5-8 years	68	10.79	3.76		
	9-12 years	47	10.00	4.21		
	>12 years	87	10.38	4.45		
	Total	303	10.62	4.08		
Personal Accomplishment	<2 years	63	18.94	5.52	6.161	0.187
	2-4 years	38	18.45	6.07		
	5-8 years	68	16.94	4.91		
	9-12 years	47	19.17	7.47		
	>12 years	87	17.83	7.07		
	Total	303	18.15	6.28		

Table 11. Occupational burnout levels and difference analysis results by ship type

	Ship type	N	X	SD	X²	p
Emotional Burnout	Dry cargo	156	21.60	7.70	8.623	0.196
	Bulk carrier	15	25.00	7.36		
	Container	23	20.74	7.03		
	Ro-Ro	38	22.03	7.21		
	Other	2	22.50	4.95		
	Chemical tanker	53	19.55	7.55		
	Oil tanker	16	21.19	7.05		
	Total	303	21.38	7.53		
Depersonalization	Dry cargo	156	10.88	4.35	6.767	0.343
	Bulk carrier	15	11.80	3.61		
	Container	23	10.74	5.02		
	Ro-Ro	38	10.82	3.26		
	Other	2	11.50	6.36		
	Chemical tanker	53	9.70	3.49		
	Oil tanker	16	9.31	3.44		
	Total	303	10.62	4.08		
Personal Accomplishment	Dry cargo	156	18.67	6.25	14.022	0.029
	Bulk carrier	15	18.40	5.95		
	Container	23	16.74	6.85		
	Ro-Ro	38	18.53	4.67		
	Other	2	16.50	6.36		
	Chemical tanker	53	15.98	6.12		
	Oil tanker	16	21.31	8.31		
	Total	303	18.15	6.28		

Table 12. Occupational burnout levels and difference analysis results by salary range

	Salary range	N	X	SD	X²	p
Emotional Burnout	<\$854	53	19.72	7.57	4.822	0.306
	\$854-1,282	78	21.83	7.95		
	\$1,283-1,708	44	20.43	6.74		
	\$1,709-2,135	33	21.67	7.36		
	>\$2,135	95	22.27	7.50		
	Total	303	21.38	7.53		
Depersonalization	<\$854	53	11.11	4.35	4.617	0.329
	\$854-1,282	78	11.26	4.65		
	\$1,283-1,708	44	10.34	3.89		
	\$1,709-2,135	33	10.88	4.15		
	>\$2,135	95	9.86	3.37		
	Total	303	10.62	4.08		
Personal Accomplishment	<\$854	53	19.53	6.93	7.720	0.102
	\$854-1,282	78	18.87	6.43		
	\$1,283-1,708	44	18.07	6.65		
	\$1,709-2,135	33	17.39	5.30		
	>\$2,135	95	17.07	5.81		
	Total	303	18.15	6.28		