The Perceived Stress and Its Effects on Satisfaction With Life: Emergency Department Staff During Covid-19 Pandemic

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Abstract

This study was carried out to reveal the effect of perceived stress on life satisfaction of employees in 112 units during the Covid-19 process and to determine which demographic characteristics affect perceived stress and life satisfaction. This is a cross-sectional study. The population of the study includes health staff working for The Ministry of Health as 112 emergency staff in Samsun and its vicinity in Turkey (n=521). The sample size was found to be 217 at 50% prevalence by 0.05 deviation. The data of the study was collected online from October 1st through November 30th, 2020. For the data, three different forms were used: personal information forms, satisfaction with life scale (SWLS), and perceived stress scale (PSS). To define demographic characteristics for the evaluation of the data, we used number and percent, and to examine the correlations among mean scale scores we conducted correlation and regression analyses. In addition, to figure out the effects between PSS and SWLS with demographic characteristics, t-test and Anova tests were used. The mean scale score for the perceived stress in the study was 28.39±6.567 and the mean score for satisfaction with life was 10.97±3.643. It was found that gender, occupation, chronic diseases, and the perceived stress scale were statistically significant (p<.05). The mean scale scores for the perceived stress of women (25.27±5.577), emergency medical technicians (EMTs) (25.28±5.643), and the participants with chronic diseases (26.31±3.810) were higher. Similarly, gender, age, marital status, occupation along with monthly earnings and satisfaction with life were found to be statistically significant (p<.05). The mean scale score for satisfaction with life of men (11.50±3.910), the participants over 31 years of age (11.47±3.999), the married ones (11.11±3.776), the drivers (15.89±7.0619), and the participants that meet their expenses with their earnings (12.35±3.887) were higher. From the study findings, it might be concluded that the perceived stress and satisfaction with life are statistically significant and there exists a moderate avoidant correlation between them.

Keywords: Satisfaction with life, the perceived stress, health staff.

1. Introduction

Covid-19 outbreak, firstly observed in December 2019 in the city of Wuhan in China, has dramatically affected all countries in the world. It is assumed that it caused adverse effects on human psychology as in literature many studies reported that previous pandemics such as SARS in 2003, H1N1 in 2009 and Ebola in 2014 adversely affected many people around the world (Blakey et. al.,2015; Bonanno et.al.,

2008; Cowling et.al., 2010; Wuet et.al., 2009). Similarly, following the Covid-19 outbreak, the level of anxiety has simultaneously increased following the reports of news and the number of infected people (Lima et.al., 2020). In the study carried out by Duan and Zhu (2020), the researchers declared that they observed a high increase in psychological complaints such as anxiety and depression. In addition, a study with 1060 participants in China found moderate and serious psychological problems such as obsessive-compulsive sensitivity, phobic anxiety, and psychoticism in more than 70 percent of the participants (Tian et.al., 2020). Therefore, we immediately need to understand the mechanisms that stop psychological problems that occur during pandemics and threaten mental health of individuals (Yan et.al., 2021). Any pandemic leads to acute, large scale, and checkless stress. For instance, studies carried out during the previous SARS outbreak declared that the perceived stress before and after the pandemic was increased drastically (Yu et.al., 2005); similarly, in another study, it was reported the perceived stress was increased during the Covid-19 pandemic (Wang et.al., 2020).

The perceived stress reflects the subjective evaluation of stress that individuals feel against an objective event. When individuals come across different stressors, they develop a number of emotional problems if they lack enough sources (Yan et.al., 2021). Various studies in literature reported that the perceived stress does not only cause anxiety, depression, and post-trauma stress, but also causes some other physical problems such as cardiovascular diseases and paralysis (Besharart et.al., 2020; Shi, et.al., 2020; Spada et.al., 2008; Wang et.al., 2019; Booth et.al., 2015; Wright et.al., 2019).

Health staff are also exposed to these stress factors resulting from the Covid-19 pandemic. More workload and largely changing working environment due to the pandemic result in emotional problems (Shanafelt et.al., 2020). 1716 health workers were infected and 6 of them passed away at the peak of the pandemic in China and 8.3% of all infected people were health staff in Italy. In March 2020, more than 5400 health staff in Spain accounted for 14% of all infected people in the country and in April 2020, 7428 health staff in Turkey were infected, which corresponded to 6.5% of all infected people (Buckley et.al., 2020; Stone et.al., 2020; SB 2020). The data shows that the pandemic has affected mostly health staff in all countries in the world (Stone et.al., 2020).

Covid-19 pandemic forced health systems globally, caused an increase in workload owing to the insufficient number of health staff, and increased the risk of infection (Adams et.al., 2020, Willan et.al., 2020), from which arise stress and anxiety for these workers (Willan et.al., 2020). The findings of a study conducted with 1200 health staff in China showed heightened anxiety, depression, somnipathy, and fear among health staff.

Moreover, it was also found that health staff that directly help infected people have a higher level of psychological problems than others (Shanafelt et.al., 2020). Various factors that are inherent in psychological problems observed in health staff are as follows:

· Emotional tension and physical fatigue while caring for patients whose conditions worsen rapidly;

· Infected or passed away colleagues due to Covid-19;

· Lack of equipment that could protect them from Covid-19;

- Fear of infecting close family members;

- Spending time out of the family due to quarantine;

- Lack of updated information and communication;

- Limited access to psychological help centers and specialists to get treatment for depression, anxiety, and psychological problems.

This study aims to observe the perceived stress and its effects on satisfaction with life of 112 staff that worked during the Covid-19 pandemic and to clarify the determiners for the stress.

2. Methods

2.1. Objectives

The aim of this cross-sectional study is to observe the perceived stress and its effects on satisfaction with life of 112 staff during Covid-19 and to clarify the determiners for the stress. In our study, we tried to find answers to the questions below:

1. Are the perceived stress and the satisfaction with life related?

2. Is the satisfaction with life affected by the perceived stress?

3. What demographic characteristics affect the perceived stress and its effects on satisfaction with life?

4. What are the mean scores for the satisfaction with life and the perceived stress?

2.2. Sample Size and Participants

The population of the study includes health staff working for the Ministry of Health as 112 emergency staff in Samsun and its districts (n=521). The data of the study was collected online from October 1st through November 30th, 2020. The sample size was found to be 217 at 50% prevalence by 0.05 deviation.

2.3. Data Collecting

In our study, we preferred personal information forms, satisfaction with life scale (SWLS), and perceived stress scale (PSS), which also show personal and occupational details about the participants.

   a. Personal Information Forms

This form includes a questionnaire of 15 questions prepared by the researchers to get information about personal and occupational details about the participants (age, gender, marital status, department, total year of employment, etc.).

   b. Perceived Stress Scale

Perceived stress scale (PSS) was developed by Kamarck and Mermelstein in 1983. The scale includes forms with 14, 10 or 4 statements. In this study we used PSS 10, whose consistency and reliability in Turkish were tested by Eskin et.al. (2013). Participants score each statement in a way similar to Likert by choosing different grades such as "Never (0)" or "Very often (4)." The 4th, 5th, 7th, and 8th statements in the scale are graded reversely and participants get a score from 0 to 40 points. The higher the score, the higher the perceived stress of an individual is. Cronbach Alpha value of the scale in our study was 0.75.

c. Satisfaction with Life Scale

Satisfaction with life scale (SWLS) was developed by Diener et.al. in 1985 and successfully translated into Turkish by Köker in 1991. This scale consists of 5 questions and in 2016, it was adopted to Likert and tested for consistency as well as reliability. The grading in the scale ranges from "Do not agree (1)" to "Completely agree (5)." The highest score in the scale is 25, whereas the lowest is 5. Lower score means lower satisfaction with life. Cronbach Alpha value of the scale in our study was 0.85.

The data of this study was collected soon after the questionnaires were sent to the participants online from October 1st through November 30th, 2020. In the first statement of the online questionnaire, the permission of the test taker was granted. All the staff in 112 emergency departments were informed; however, only 221 forms were sent complete, which were analyzed for the study.

3. Analysis

To analyze the study findings, SPSS 25.0 packaged software was used. To define demographic characteristics for the evaluation of the data, we used number and percent, and to examine the correlations among mean scale scores we conducted correlation and regression analyses. In addition, to figure out the effects between PSS and SWLS with demographic characteristics, t-test and Anova tests were used.

4. Ethics Committee

This study is approved by the Ethics Committee of Alanya Aladdin Keykubat University on 19.11.2020 with the number 10354421-2020/25-27.

5. Limitations

This study is limited to 112 emergency department staff only in Samsun and its vicinity. The results of the study cannot be generalized.

6. Results

Of all the participants, 52% was women, 51.1% was emergency medical technicians, 29.4% was paramedics, 71.5% was married, 88.2% worked in emergency service centers, 52.5% had more expenses than their earnings, 88.4 % had elementary family, 84.2% had no chronic diseases, 57% did not smoke.

The mean age of the participants was 32.61±6.292, the mean total year of employment was 12.04±4.601, the mean total weekly working hours was 46.24±5.377, the mean total year of employment in emergency department was 9.94±3.457, the mean PSS score was 28.39±6.567, and the mean SWLS score was 10.97±3.643 (Table 1).

Table 1. Socio-Demographic Characteristics (n=221)

	Characteristics	n	%
Gender	Female	115	52
	Male	106	48
	Doctor	11	5
	Health Officer	6	2.7
	Nurse/Midwife	17	77
Occupation	Emergency Medical Technician	113	51.1
	Paramedic	65	29.4
	Driver	9	4.1
Marital Status	Single	63	28.5
	Married	158	71.5
	Control Center	22	10
Department	Emergency Service Center	195	88.2
	Office	2	0.9
	Technical Service	2	0.9
	More than expenses	4	1.8
Earning	Equal to expenses	101	45.7
	Less than expenses	116	52.5
Family Type	Elementary	182	82.4
	Wide	12	5.4

	Single Parent	27	12.2
Chronic Disease History	Yes	35	15.8
	No	186	84.2
	Gastrointestinal system	8	25
	Cardiovascular system	9	28.1
Type of Chronic Disease	Neurologic, Psychiatric	4	12.5
	Orthopedic	7	21.9
	Respiratory system	4	12.5
Smoking	Yes	95	43
	No	126	57
Disability	No	221	100

Age	32.61±6.292	**Total year of employment**		12.04±4.601
Weekly working hours	46.24±5.377	**Total year of employment in emergency dept.**	112	9.94±3.457
Mean Perceived Stress Scale	28.39±6.567	**Mean SWLS**		10.97±3.643

Table 2 shows correlation analysis of the study findings.

Table 2. Pearson Correlation Analysis

Dependent Variable	*Independent Variable*	*Pearson Correlation Index*	*p*
Satisfaction with life	Perceived stress scale	-.683	.000

Depending on the correlation analysis of the study findings, PSS and SWLS are statistically significant (p=0.00) and there exists a moderate avoidant correlation between them. The result might mean that a higher level of perceived stress lowers the level of satisfaction with life.

Table 3 shows regression analysis of the study findings.

Table 3. Regression Analysis

	B	**Std. Error**	**β**	**t**	**p**
Constant	2.726	0.374	-	7.298	**0.000**
Perceived Stress	-0.241	0.167	-0.099	-1.423	**0.000**
p=.000	F:91.268	R^2:.466			

Dependent variable: Satisfaction with life   **Independent Variable:** Perceived Stress

Depending on the results of the analyses, regression model is statistically significant (F=91.268, p=.000) and the change of the perceived stress as an independent variable in the satisfaction with life is 46.6%.

Table 4 shows that gender, age, occupation, chronic disease history, and PSS are statistically significant (p<0.05). Similarly, gender, age, marital status, occupation, earning level, and SWLS are statistically significant (p<0.05). Whereas the mean SWLS scores are lower, the mean PSS scores are higher in women, the participants under 30 years of age, married ones, the participants with chronic diseases, EMTs, and the participants with earning more than expenses.

Table 4. Comparison of Socio-Demographic Characteristics, PSS and SWLS.

Characteristics		PSS $X±$ Sd	SWLS $X±$ Sd
Gender	Male	21.41±6.968	11.50±3.910
	Female	25.27±5.577	10.47±3.313
	p*	**.041**	**.000**
Age	Under 30	23.91±7.332	10.23±2.917
	Over 31	23.04±5.995	11.47±3.999
	p*	.346	**.01**

Marital Status	Married	23.93±5.616	11.11±3.776
	Single	21.81±8.653	10.54±3.220
	p*	.316	**.041**
Chronic Disease History	Yes	26.31±3.810	9.97±3.024
	No	22.81±6.846	11.16±3.730
	p*	.004	.077
Occupation	Doctor	19.0±0.000	16.0±0.000
	Health Officer	20.33±2.066	14.67±3.615
	Nurse/Midwife	22.88±6.918	11.94±3.491
	EMT	25.28±5.643	10.48±3.338
	Paramedic	21.63±6.573	10.38±2.731
	Driver	16.33±10.173	15.89±7.061
	p**	**.000**	**.000**
Earning	More than expenses	25.00±2.309	11.50±1.732
	Equal to expenses	22.35±5.890	12.35±3.887
	Less than expenses	24.16±7.070	9.85±3.088
	p**	.124	**.000**

p*: Student t test p: One Way Anova test**

7. Discussion

This study observes the perceived stress and its effects on the satisfaction with life of staff in emergency departments in Turkey during the Covid-19 pandemic.

The study findings show that the perceived stress and satisfaction with life are statistically significant, and that a moderate avoidant correlation exists between them. Güvenkaya (2009) studied the perceived stress and satisfaction with life in yoga doers and reported a moderate avoidant correlation between them. The results of that study show parallelism with the results of our study. In another study carried out by Göldağ (2019), Ekşi, and Sevim (2020), the researchers declared that a moderate avoidant correlation stands between the perceived stress and the satisfaction with life. Zheng et.al. (2019) studied 1196 graduate students and reported a moderate avoidant correlation between the perceived stress and the satisfaction with life; similarly, Hui and Ramzan (2017) found a strong avoidant correlation in their study carried out with 242 medical college students.

From our study findings, we realized that the mean PSS was 28.39±6.567 and the mean SWLS was 10.97±3.643. Duan and Zhu (2020) and Satıcı et.al. (2020) reported in their studies that when stress levels of individuals increase, the level of satisfaction with life decreases. The results of our study are in accordance with the study of Göksu and Kumcağız (2020) (25.83±7.43).

According to analyses, the perceived stress varies depending on gender. The perceived stress in women is higher than men. In the study of Göksu and Kumcağız (2020), the perceived stress of women during the Covid-19 pandemic was found to be higher. Zhang et.al. (2020) and Şahin et.al. (2020) studied health staff during the pandemic and observed that women had higher stress levels. Wang et.al. (2020) studied psychological reactions that people had during the first period of the pandemic and reported that the stress levels of women are higher than those of men.

From the study findings, there was a statistically significant difference between the perceived stress and occupation. The perceived stress of EMTs, nurses, and midwives was higher than that of other health staff. This is probably due to the fact that they care for and interact more closely with patients. In the study of Göksu and Kumcağız (2020), the perceived stress was reported to be more common in nurses. Zhang et.al. (2020), Shen et.al. (2020), Bohlken et.al. (2020) studied health staff and announced that the perceived stress of nurses is higher than that of other health staff.

According to the study findings, gender, age, marital status, occupation, earning level, and satisfaction with life are also statistically significant. Aşkın (2019) studied doctors and nurses and had similar data that is consistent with our findings. In another study carried out by Dost (2007), a significant difference existed between the age and satisfaction with life. Atasoy and Turan studied the correlation between emotional labor and the satisfaction with life of nurses in 2019, and they found a significant difference between the satisfaction with life and earning level, as it was also revealed in our study that there is a higher mean of SWLS in individuals whose earnings are equal to their expenses. In the study of Benli and Yıldırım (2017), the researchers emphasized that nurses whose earnings are equal to their expenses have a higher mean score of satisfaction with life.

Another finding of our study is that the mean SWLS score was 10.97±3.643. The mean SWLS score was 16.82±5.88 in the study conducted by Benli and Yıldırım (2017) on the satisfaction with life and attitudes towards death of nurses; Eren (2008) found it to be 25.14 in a study on oncology nurses: Mirfarhadi et.al. (2013) found it as 25.47±6.51 with Iranian nurses: Ünal et.al. (2001) observed that it was 20.03±6.64 in doctors: Tekir et.al. (2016) found that it was 22.49±6.2, and Yıldırım et.al. (2016) found it as 20.39±6.59 in the studies on health staff. The reason for the fact that the mean SWLS score was low in our study might be because the participants work in close contact with the patients and due to the high level of the perceived stress, the quarantine periods, working with no vacation, and unfair earning differences.

8. Conclusions

In this study, it was found that the perceived stress has a moderate avoidant effect on the satisfaction with life. Although the PSS score of the participants was high, they had lower SWLS score, which is an expected result since health staff actively work against the pandemic. In order to lower stress and increase the satisfaction with life, the suggestions below might be taken into consideration:

Improving the income level of health workers;

• Employing people with chronic diseases in units without patient contact;

• Raising awareness by giving stress management training to employees.

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10. Author Contributions

Data collection YD, PO; writing manuscript YD, PO, ZAK, SÖ; review: YD, SÖ.

Conflict of Interest

The authors declare that they have no conflict of interest.

11. Ethical Approval

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12. Funding

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