

# Problems Experienced by Family Physicians in Sivas during the Pandemic Period and Its Relationship with COVID-19 Fear

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## ABSTRACT

**Aim:** To determine the COVID-19 fear level of family physicians during the pandemic working in Sivas and its relationship to their experienced problems.

**Methods:** This descriptive study was delivered to 225 family physicians in Sivas between December-January 2021 via an online survey containing 24 questions of participants' sociodemographic data, the problems they experienced in family medicine, and the COVID-19 Fear Scale. Descriptive statistics and logistic regression analysis were used to analyze the data.

**Results:** A total of 138 family physicians whose mean age was  $37.6 \pm 7.3$ , with 52.2% males and 47.8% females, included. Participants' 16.7% had the COVID-19 infection. COVID-19 Fear Scale mean score of  $18.3 \pm 6.5$ , appearing significantly higher in females ( $19.6 \pm 5.8$ ) than in males ( $17.2 \pm 6.9$ ). 28.3% of subjects needed taking professional psychological support, on which increase of working period in family medicine and COVID-19 Fear Scale Score and being single had a positive effect. Also, 86.2% experienced primary health care services problems, most frequently ranked as cancer screening, mobile service, and chronic illness follow-up.

**Conclusion:** Necessary psychosocial support should be provided to all healthcare workers, especially family physicians, during the pandemic. So, we recommend authorities take proper precautions to continue without interruption for primary preventive health services.

**Keywords:** COVID-19, fear, family practice, primary care physicians

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## Introduction

The coronavirus disease 2019 (COVID-19), started in Wuhan, China, at the end of December 2019, has spread rapidly worldwide and been announced a pandemic, with the first coronavirus case in Turkey emerged on March 11, 2020 (1,2). Losing the lives of healthcare workers, always at the forefront of combating pandemics, has become one of the world's major problems. Based on Amnesty's recent report in early September, it has been reported that at least 7 thousand healthcare workers globally died from the coronavirus (3). At the same time, studies have shown various psychological disorders such as depression, anxiety disorder, and post-traumatic stress increase in healthcare workers during the pandemic period (4-6). The role of primary healthcare services in the COVID-19 epidemic differs according to countries (7-9). Although there is not much data on this subject in the literature, lower coronavirus-related death rates were reported in countries with intense primary health care (10).

Family physicians have defined all kinds of preventive health services for individuals (vaccination, follow-up, cancer screening) and primary care diagnostic and therapeutic health services as physicians providing comprehensive and continuous service and mobile health services when necessary (11). Like all health institutions, Family Health Centers (FHC) are also risky places in terms of virus transmission in the presence of an epidemic; therefore, performing triage is necessary to detect high-risk patients as soon as possible (12). The family physicians have performed many different tasks, such as exceptional tracking of coronavirus patients and society's education on this subject, with fever tracking, triage, screening, filiation (contact tracing), and telemedicine, in Turkey's COVID-19 pandemic period (13).

In this study, we aimed to determine the COVID-19 fear level of family physicians working in Sivas during the pandemic and its relationship with their experienced problems.

## Methods

This study is a type of survey and descriptive research. The research universe consisted of physicians working in Sivas' family medicine system since March 2020, when there were 225 family physicians. To reach the universe, family physicians' social media platforms to communicate within the province were utilized.

Physicians were informed about the study through this platform, and the study questionnaire link (created via Google forms) was sent. Informed consent was obtained on the first page of the online questionnaire. Participants who accepted and approved to participate in the study were included. Data were collected for the study between December 1, 2020, and January 1, 2021, when participants were invited to research by sending a survey link from social media platform once a week, a total of four times. Duplicate participants are blocked by IP address.

The data form used in the study composed of 24 questions in total, 17 of which were containing family physicians' descriptive characteristics (e.g., age, gender, marital status, chronic diseases, if any, drugs used continuously, presence of being passed on COVID-19 infection), and the problems experienced in family medicine practices and the use of personal protective equipment during the pandemic period. The "COVID-19 Fear Scale" was used in the next seven questions (14,15).

COVID-19 Fear Scale was developed to measure people's fear of coronavirus by Ahorsu et al. (14) in 2020. Bakioğlu et al. (15) conducted the Turkish validity and reliability study. With a Cronbach  $\alpha$  value of 0.88, this scale consists of 7 items and is answered in 5-point Likert type; it is one-dimensional, and there are no reverse-scored items.

The collected data were analyzed using SPSS (Statistical Package for Social Sciences) software package for Windows version 25. We assessed the normality analysis of numerical data using the Shapiro-Wilk test. Descriptive statistical analysis of the data was performed first, frequencies for categorical data and central distribution measures

(Mean  $\pm$  Standard Deviation) for numerical data were also calculated. We analyzed whether numerical data that are not normally distributed differs significantly between two independent groups by the Mann-Whitney U test and between three independent groups by the Kruskal-Wallis H test. A Chi-square test was conducted for the comparison of categorical data.

Binary logistic regression analysis, with the model's Nagelkerke R<sup>2</sup> value of 0.340, at a sensitivity of 89.9% and specificity of 41.0%, was used to investigate the factors affecting the need to take psychological support. The outcome variable, the need to take professional psychological support during the pandemic period, was divided into two categories: needed and did not need. The Wald Chi-square test was used to determine the significance of the model coefficients generated using logistic regression. The model's continuous variables were age, working time in family medicine, and COVID-19 Fear Scale score. The categorical variables included being a female vs. being a male, being single vs. being married, smoking vs. not smoking, presence of being passed on COVID-19 infection vs. absence of it, and presence of at least one COVID-19-related death of close relatives vs. absence of it. The results were presented using estimated coefficients, standard errors, Wald Chi-squares, p values, odds ratios, and confidence intervals. A p-value of less than 0.05 was considered for statistical significance, with a 95% CI.

The study's permission was obtained from the COVID-19 Scientific Research Commission of the Turkish Ministry of Health, and the ethical approval (18.11.2020 Decision number 2020-11/04) from the Non-Invasive Clinical Research Ethics Committee of Cumhuriyet University. We also took permission to use the scale in our study from Bakioğlu F. via e-mail.

## Results

Of the 138 family physicians who volunteered to participate in the study, 47.8% (n=66) were female, and 52.2% (n=72) were male, with a mean age of 37.6 $\pm$ 7.3. A comparison of the participants' descriptive characteristics and presence of being passed on COVID-19 infection is shown in Table 1.

**Table 1.** Comparison of participants' descriptive characteristics and presence of being passed on COVID-19 infection

		Total	Presence of being passed on COVID-19 infection		p
			Yes	No	
Gender	Female	66 (47.8%)	8 (12.1%)	58 (87.9%)	0.126
	Male	72 (52.2%)	15 (20.8%)	57 (79.2%)	
Age (M $\pm$ SD)		37.6 $\pm$ 7.3	35.5 $\pm$ 7.9	38.1 $\pm$ 7.1	<b>0.049</b>
Marital status	Married	105 (76.1%)	18 (17.1%)	87 (82.9%)	0.513
	Single	33 (23.9%)	5 (15.2%)	28 (84.8%)	
Chronic diseases	Present	24 (17.4%)	0 (0%)	24 (100%)	<b>0.008</b>
	Absent	114 (82.6%)	23 (20.2%)	91 (79.8%)	
Drugs used continuously	Present	20 (14.5%)	0 (0%)	20 (100%)	<b>0.019</b>
	Absent	118 (85.5%)	23 (19.5%)	95 (80.5%)	
Smoking	Yes	32 (23.2%)	10 (31.3%)	22 (68.8%)	<b>0.015</b>
	No	106 (76.8%)	13 (12.3%)	93 (87.7%)	

16.7% (n=23) of the participants passed on a COVID-19 infection, with 52.9% (n=73) worked in a family health center, which had at least one COVID-19-infected healthcare worker. 58.0% (n=80) of them had at least one COVID-19-infected close relatives, while 25.4% (n=35) had at least one COVID-19-related death of close relatives. 16.7% (n=23) of the participants isolated themselves from their families entirely, and 56.5% (n=78) partially; with 26.8% (n=37) did not isolate themselves at all. There was no significant difference between the frequency of isolating themselves from their families and the need to take psychological support during the study period (p=0.253).

Family physicians' answers to the questions we asked about the changes they made specific to the Family Health Center (FHC) pandemic period are presented in Table 2.

**Table 2.** Practices performed in the Family Health Center during the pandemic period

	Yes	Partially	No
Do you think you have taken any necessary measures against the pandemic at FHC?	37 (26.8%)	91 (65.9%)	10 (7.2%)
Do you think enough PPE is provided to FHCs by the Provincial Health Directory?	23 (16.7%)	82 (59.4%)	33 (23.9%)
Do you practice triage in your Family Health Center?	45 (32.6%)	63 (45.7%)	30 (21.7%)
Have you taken measures to protect risky patient groups such as children, pregnant women, over 65 years of age, etc., from COVID-19 infection in FHC?	36 (26.1%)	83 (60.1%)	19 (13.8%)

FHC: Family Health Center, PPE: Personal protective equipment

The rate of those who stated that they had problems, ranked as cancer screening (65.2%; n=90), mobile health service (59.4%; n=82), chronic disease follow-up (50.7%; n=70), adult vaccination (44.9%; n=62), baby monitoring (42.8%; n=59), pregnancy monitoring (39.1%; n=54), and infancy vaccination, respectively, at the point of providing primary healthcare services during the pandemic period was 86.2% (n=119). The total mean score they got from the COVID-19 Fear Scale, which was significantly higher (p=0.014) in females (19.6±5.8) than in males (17.2±6.9), was 18.3±6.5. Remarkably, those who needed taking professional psychological support (21.0±6.9) during this period tended to have higher

scale scores than those who did not need taking it (17.3±6.1) (p=0.005). There was no significant difference between the scale scores and marital status (p=0.125), chronic diseases (p=0.886), smoking (p=0.832), presence of being passed on COVID-19 infection (p=0.968), presence of at least one COVID-19-related death of close relatives (p=0.081), and the frequency of isolating themselves from their families (p=0.419). Table 3 compares the participants' COVID-19 fear scale scores with personal protective equipment use frequency.

**Table 3.** Comparison of the participants' COVID-19 fear scale scores with personal protective equipment use frequency

	Frequency of use			p
	Most of the time	In the presence of an indication	Rarely	
Glove	18.1±5.3	18.1±6.1	23.2±13.4	0.748
Surgical mask	18.7±6.5	15.5±6.0	11.0±0.0	<b>0.042</b>
N95/FFP2 mask	20.5±6.5	18.2±6.4	14.0±6.0	<b>0.031</b>
Visor or goggles	20.1±6.3	18.7±6.4	14.1±5.8	<b>0.001</b>
Disposable bib/overall	21.4±7.2	19.0±5.7	16.8±7.0	<b>0.010</b>

Family physicians' views on family medicine practices during the pandemic period are given in Table 4.

**Table 4.** Family physicians' views on family medicine practices during the pandemic period

	Agree	Undecided	Disagree
During the pandemic, family physicians should play an active role in the prevention of virus spread and education of society	112 (81.2%)	22 (15.9%)	4 (2.9%)
All procedures in COVID-19 patients should have been done in the relevant hospitals in the 2nd or 3rd level in the pandemic	98 (71.0%)	23 (16.7%)	17 (12.3%)
Family physicians were burdened with much work during the pandemic period	110 (79.7%)	15 (10.9%)	13 (9.4%)
The exceptional tracking of possible/confirmed COVID 19 patients we made over the phone was effective in the management	29 (21.0%)	58 (42.0%)	51 (37.0%)
I have enough information about COVID-19 and its treatment and follow-up	53 (38.4%)	65 (47.1%)	20 (14.5%)
Our Ministry of Health is required to organize training for family physicians and other family health staff regarding the pandemic	84 (60.9%)	31 (22.5%)	23 (16.7%)
In the provincial health directorate and ministry of health, I think family physicians have been adequately represented or have had a say.	14 (10.1%)	23 (16.7%)	101 (73.2%)
There is no problem in procuring PPE in the coverage of family medicine.	11 (8.0%)	46 (33.3%)	81 (58.7%)
FHCs have a safe working environment	8 (5.8%)	34 (24.6%)	96 (69.6%)
COVID-19 infection should be defined as an occupational disease	117 (84.8%)	12 (8.7%)	9 (6.5%)
Additional payments made to physicians during this period are sufficient.	11 (8.0%)	23 (16.7%)	104 (75.4%)

PPE: Personal protective equipment, FHC: Family health center

Thirty-nine (28.3%) of family physicians needed taking professional psychological support, on which the increase in working time had 1.3 times ( $p=0.025$ ), the increase in COVID-19 Fear Scale score had 1.1 times ( $p<0.001$ ), and being single had 0.08 times ( $p<0.001$ ) an effect positively. In contrast, the

increasing age had 0.08 times ( $p=0.034$ ) an effect negatively during this period. The binary logistic regression analysis was made to reveal the factors affecting the need to take professional psychological support in family physicians during the pandemic; the results are demonstrated in Table 5.

**Table 5.** Results of the binary logistic regression model revealing the factors affecting the need to take professional psychological support in family physicians during the pandemic

	Coefficient ( $\beta$ )	SE ( $\beta$ )	W	p	OR	95% CI	
						Lower	Upper
Age	-0.135	0.064	4.481	<b>0.034</b>	0.874	0.771	0.990
Female (compared to male)	-0.572	0.514	1.235	0.266	0.565	0.206	1.547
Being single (compared to being married)	2.425	0.621	15.253	<b>&lt;0.001</b>	0.088	0.026	0.299
Smoking (compared to not smoking)	1.535	0.579	0.853	0.356	1.707	0.549	5.306
Working length in family medicine	0.272	0.121	5.054	<b>0.025</b>	1.312	1.035	1.663
Presence of being passed on COVID-19 infection (compared to not had)	-1.017	0.673	2.279	0.131	0.362	0.097	1.354
Presence of at least one COVID-19-related death of close relatives (compared to not had)	-0.054	0.488	0.012	0.911	0.947	0.364	2.463
COVID-19 fear scale score	0.133	0.038	12.442	<b>&lt;0.001</b>	1.142	1.061	1.229

Note:  $n = 138$ , Nagelkerke  $R^2 = 0.340$ ; SE, standard error; W, Wald chi-square; OR, odds ratio; CI, confidence interval

## Discussion

Physicians, nurses, and other assistant healthcare workers are both at high risk for morbidity and mortality due to infections, and most are exposed to the disaster's stress during the epidemic period (16). Family physicians who are primary care workers struggle with coronavirus at the forefront by taking all kinds of risks during the pandemic, like other healthcare workers (17).

According to the World Health Organization report on January 27, approximately 1.29 million healthcare workers, consisting of 8% of all cases, have been infected with COVID-19 (18). The Turkish Ministry of Health's September 2020 report revealed that 2.71% of 1 million 100 thousand health workers in our country had been diagnosed with COVID-19 infection. Moreover, unfortunately, as of September 12, 2020, 85 healthcare workers had died due to COVID-19, of whom 48 were physicians (19). The COVID-19 rate in healthcare workers, on April 29, in the COVID-19 pandemic in the 6th-month evaluation report of the Turkish Medical Association, has been

reported to be 4.95 compared to society as being 8.48 times higher on September 2 (20). According to the pandemic report of Hacettepe University, between 20 March-20 November 2020, 18.7% of healthcare workers who underwent the COVID-19 PCR test were emphasized to be positive (21). In our study, too, 16,7% of family physicians working in Sivas passed on COVID-19 infection. This result is similar to the rates in other healthcare workers, being emerging data from other studies.

In previous studies, smoking has been shown to impair mucociliary activity and affect upper respiratory tract infectious disease frequency and prognosis (22). Cigarettes and tobacco products (cigarettes, e-cigarettes, or hookahs) produce SARS-CoV-2 containing aerosols and contaminating surfaces in the environment (23). In concordance with the literature, the rate of smoking physicians passing on COVID-19 infection was significantly higher in the present study.

It has been stated that for healthcare workers, fear of being infected with COVID-19, in other words,

which means fear of infecting family and loved ones rather than self-infection, is higher than in the general population (17). In some studies, in different previous outbreaks, it has been established that the fear and anxiety of infecting family members of healthcare workers from China and Canada involved in the fight against SARS is high (24,25). For these reasons, healthcare workers isolate themselves partially or entirely from family members. Özgünay et al. (26) determined that half of the anesthesiologists isolated themselves from their families during the pandemic period. Again, Güler et al. (27) indicated that some family physicians felt themselves under psychological stress because of isolating themselves from their families during the pandemic (27). Similarly, the majority of physicians, once again, expressed that they isolated themselves from their families in our study.

Most importantly, it has been suggested that isolation can further increase employees' psychological stress by causing to decrease in psychosocial support provided by the family (28). In the current study, no significant difference was found between the need to take professional psychological support during the pandemic and the frequency of isolating themselves from their families. However, in many different literature studies, strong evidence has been shown that healthcare workers had psychological problems during the pandemic period and received psychological support. In Aksoy et al.'s (29) study on nurses working in a pandemic hospital, 78% of the participants noted having symptoms of insomnia, stress, and anxiety in the epidemic period; despite this, 94% said they did not take psychological support. Besides, 94% expressed they were worried about getting a COVID-19 infection, and 96% about infecting their families and friends. In Çıtak and Pakdemir (30) study, it was concluded that the general anxiety level of about 40% of individuals was high. In another study with 230 physicians and nurses serving in the front line, 23% of the employees developed clinical anxiety symptoms and 27% post-traumatic stress disorder symptoms (31).

Polat et al. (32) detected a significant difference between personal protective equipment use and

Anxiety and Stress Scale scores. Also, in our study, with the increase in the COVID-19 fear scale score, the frequency of personal protective equipment use increased. This situation may be due to the thinking of physicians to protect themselves from possible infections. In the literature, during the COVID-19 pandemic, some researchers found a significant relationship between gender and stress, anxiety, and depression levels. They attributed this difference to have higher anxiety for protecting their families in female health workers (19). Arpacioğlu et al. (33), in their study on healthcare workers working actively during the pandemic, found the mean score of the COVID-19 fear scale to be higher in women than in men, similar to our study. In the study of García-Reyna (34) on hospital staff, it was determined that women had higher COVID-19 fear than men, and in terms of the working unit, nurses had higher COVID-19 fear than other employees. Hoşgör et al. (35) study on 112 emergency health workers detected COVID-19 anxiety significantly higher the longer the professional experience and in women. The need to take for psychological support was found to be higher in females also in our study. In addition, the taking psychological support rate was associated with increasing participants' working period in family medicine.

In Polat et al. (32) study, single healthcare workers' anxiety score was higher than those of married. In a study investigating the psychological impact of the SARS epidemic on healthcare workers in Singapore, similarly, it was reported that singles experienced 1.4 times more psychiatric symptoms than married (36). In our study, too, 28% of family physicians said they needed psychological support during the pandemic period. Similar to the literature, being single had a positive effect on taking professional psychological support.

In another study carried out on nurses in the Philippines, the mean COVID-19 Fear Scale score was determined as 20, like our study result, with an increase in the need for psychological support, as this scale's score increased (37).

Güler et al.'s (27) qualitative study towards family

health center workers' experiences in the COVID-19 pandemic demonstrated the physicians took specific measures (triage, fever tracking, etc.) for the pandemic family health centers. In the interviews with family physicians in the study mentioned above, some physicians expressed that they had difficulties procuring personal protective equipment, like our study participants' expressions. Unlike our trial, Arpacioğlu et al. (33) indicated that close to half of the participants thought that, during the COVID-19 pandemic, the physical conditions such as the number of personnel and equipment in hospitals were sufficient. This difference may be primarily due to providing equipment support to secondary and tertiary level hospitals by prioritizing them in combating the pandemic.

The majority of family physicians participating in our study stated that the Turkish Ministry of Health should arrange online training on the pandemic for family physicians and family health professionals. In support of our comments, family physicians and family health workers involved in Güler et al.'s (27) research also noted that they had difficult periods because they were not trained on how to combat COVID-19 in the pandemic management process.

The vast majority of those who participated in our study said that they experienced various problems on preventive health services such as pregnant, infant and adult vaccinations and follow-up, cancer screening, mobile healthcare, chronic disease follow-up, which were the primary duties of family medicine. Family physicians' most troubling points were cancer screening and chronic disease follow-up. This situation can be caused by the fact that elderly patients, the focus of scans, see family health centers as risky areas during the pandemic. Güler et al. (27) interviews with family physicians in some family health centers, contrary to our study, demonstrated no difficulties in pregnant and infant vaccination and follow-up.

However, family physicians mostly had problems with pneumococcal vaccination in adult vaccination.

The majority of our study participants thought physicians' additional payments during this period were not enough. Importantly, Güler et al. (27) emphasized that additional payments determined were motivating; however, no payment was made.

The study was conducted in one province, and the results cannot be reflected across the country. Multi-center studies are needed on this subject. The researchers have listed problems that family physicians may experience through literature review in the present study. Thus, participants might have experienced problems other than these options. Qualitative research is needed to detect possible problems in more detail.

## Conclusion

Consequently, in the fight against the pandemic, family physicians are the first to contact patients and enable patients to enter the health system. The central role of competent, professional, and responsible primary care physicians must be recognized in the pandemic. It is necessary to strengthen primary care first to achieve success in a short time in pandemic management. Necessary precautions must be taken to ensure that primary preventive health services can continue without interruption during the pandemic period. However, all healthcare workers and especially family physicians should be provided with all kinds of psychosocial support required during the pandemic process. Considering all our study findings, we recommend the relevant authorities motivate and encourage all precious physicians who fight at the forefront by improving the physical conditions, fixing the troubles, and providing necessary psychological support. We also hope that our comments raised herein will encourage all physicians, coping with the COVID-19 pandemic, on this issue.

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