



COVID-19 fear and compliance in preventive measures precautions in workers during the COVID-19 pandemic

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Abstract

Objective The aim of the study is to identify the relationship between the fear of COVID-19 and the preventive measures of healthcare workers and service sector employees during the covid-19 pandemic.

Methods The present study is a descriptive type of research. The study's sample group consisted of 735 people and included healthcare workers ($n = 426$) and service sector employees ($n = 309$). In this study, sociodemographic characteristics, employment in the healthcare or service sector, having a relative with COVID-19, losing any relative due to COVID-19 and taking preventive measures were taken as independent variables. The dependent variable was the score from the Fear of COVID-19 Scale (FCV-19S).

Results The FCV-19S median value was 14 for the service sector and 17 for the healthcare sector. While no difference was found between occupational groups and the FCV-19S score in the service sector, there was a significant correlation between occupational groups and the FCV-19S score in the healthcare sector. The FCV-19S median value of midwives was 21, and it was higher than those of other occupational groups were. The mean FCV-19S scores of those who thought they had COVID-19 symptoms due to stress or panic were higher among the healthcare workers.

Conclusion The healthcare workers need more support in fear management than those engaged in service sector employees, and it is recommended that raising the awareness of service sector employees in terms of compliance with preventive measures should be prioritized.

Keywords COVID-19 · Fear · Healthcare workers · Service sector employees

Introduction

Extraordinary situations and epidemics cause fear in society. Fear is an unpleasant emotional state triggered by the detection of threatening stimuli. Fear can affect the behavior of humans and how they intuitively assess the dangers they are exposed to or to which they perceive to be exposed (Rohmann 2008). Repeated and anticipated events generally do not provoke fear, but anxiety arises if there is uncertainty. The COVID-19 pandemic has affected many people psychologically because of the new situations they have faced in work and social life (Pakpour and Griffiths 2020).

During the COVID-19 pandemic, some workers have been given guidance to work from home with flexible working conditions, while the workload of those who work in the healthcare and services sector has increased even more. Working during the COVID-19 pandemic both increases the likelihood of contracting the disease and affects mental health (Hu et al. 2020). A study with

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healthcare professionals found that 61% of the participants feared infection because of going to work and 64% because of their working environment. This fear among individuals who continue to work actively during the COVID-19 pandemic can adversely affect work life. In fact, in the same study, more than 65% of healthcare workers indicated that their desire not to go to work has been significantly affected by the pandemic (Ogolodom et al. 2020).

Fear can be an instrument for directing individuals to prudent behavior. To eliminate or reduce the fear of COVID-19, individuals are advised to use personal protective equipment (masks, protective clothing, disinfectants, etc.), shower rooms are provided, and change of clothes after work, maintenance of social distancing at work (arrangement of sitting areas), suitably making arrangements in the work environment, and creating safe environments are encouraged (Saleem et al. 2020). Experience from past pandemics suggests that the success of policies to slow down the transmission of a highly contagious disease is associated with the correct perception of personal and social risk factors.

Apart from the health sector, there are employees in other sectors, such as logistics, food, cleaning, and service sectors that are actively working during the pandemic. Workers in these sectors should be able to cope with the fear of the pandemic as well as adhere to measures for protecting their own health and public health. Despite reports in the literature on the level of fear and compliance with measures of the general community or health workers, no data has been found on the level of fear in conjunction with compliance with measures in the current context including service sector employees. In the present study, the relationship between the fear of COVID-19 and the observance of precautions of healthcare workers and service sector employees was investigated. Identifying the level of fear of COVID-19 among employees according to different sociodemographic variables is critical to designing targeted training or prevention programs to overcome the hardships associated with fear and helping individuals engage in preventive behavior. Identifying the current level of fear and observance of precautions is important toward preparing for future pandemics.

Methods

Research design

The present study is a descriptive type of research. No sample selection was made in the study, and snowball sampling was used while online survey links were sent to people who agreed to participate in the study.

Criteria for inclusion in the study

White-collar private-sector workers who continued to work actively during the COVID-19 pandemic, and individuals who participated in voluntary aid groups such as “Vefa Support Group” and “Turkish Red Crescent” if not in gainful employment, thus facing the risk of direct contact with other people, were included in the study.

Sample group

The study’s sample group consisted of 735 people and included healthcare workers ($n=426$) and service sector employees ($n=309$). The participants from the healthcare sector included nurses, midwives, physicians, technicians, emergency medical technicians and paramedics, health officers, medical secretaries/officers/patient admission employees, and others (managers, hospital cleaning staff, etc.).

The participants from the service sector were categorized into four groups according to their working styles: (1) Office-workplace workers (workers, engineers, technicians, mechanics, etc.); (2) workers providing home services (cargo employees, water delivery staff, bread delivery staff, etc.); (3) community volunteer workers (Vefa Support Group volunteers and Turkish Red Crescent volunteers); and (4) workers providing services for the community at their workplaces (general store staff, green grocers, butchers, grocers, checkers, cleaners, and stand attendants at bakeries and general stores, etc.)

Research variables

In this study, sociodemographic characteristics, employment in the healthcare or service sector, having a relative with COVID-19, losing any relative due to COVID-19 and taking measures were taken as independent variables. The dependent variable was the score from the Fear of COVID-19 Scale (FCV-19S).

Data collection tools

Within the scope of the project, the questionnaire included the questions on sociodemographic characteristics of the participants (personal information form), Depression Anxiety Stress Scales-21 (DASS-21), Fear of COVID-19 Scale (FCV-19S), Positive and Negative Mood Questions. In this article, findings regarding personal information form and Fear of COVID-19 Scale (FCV-19S) questions are presented.

Personal Information Form: The form, created by researchers, includes sociodemographic information,

characteristics related to COVID-19, and behavior of compliance with COVID-19 measures.

Fear of COVID-19 Scale (FCV-19S): The Turkish validity study of the FCV-19S, developed by Ahorsu et al. (2020), was conducted by Satici et al. (2020). In the scale with one dimension and seven items, there was no reversely scored item. The total score from all items of the scale reflects the level of fear of COVID-19 that an individual experiences. The scores that can be taken from the scale range from 7 to 35. The higher scores from the scale mean higher levels of the fear of COVID-19. The Cronbach's alpha value of the scale was found to be 0.894 in this study.

Data collection

The process of data collection in the study began on 05.15.2020, employed the online survey created using Google Forms, and was terminated on 06.01.2020, that is, when the first attempt of normalization in Turkey began.

Data analysis

The data obtained from the study was evaluated by using the Statistical Package for Social Sciences (SPSS) software program (version 22.0). Number and percentage distributions were presented as descriptive statistics. The Mann–Whitney *U* Test, the Kruskal–Wallis Test, and the chi-squared test were used in the evaluation of nonparametric variables. In addition, multiple regression analysis was performed to assess the correlation of the fear of COVID-19. In addition, multiple regression analysis was performed to assess the correlation of the fear of COVID-19 with age, gender,

having a relative with COVID-19, and losing any relative due to COVID-19. Reference categories were determined as being aged between 18 and 24 years, being male, not losing relatives, and not having any relative with COVID-19. The analysis of the service sector ($F=3.812, p<0.05$) and the healthcare sector ($F=4.219, p<0.001$) was carried out separately, and the explanatory power of the model was found to be 52% for the service sector and 43% for the healthcare sector.

Results

The age of the participants varied between 18 and 64, and the arithmetic mean of the ages was 30.68 ± 9.49 years for the workers from the service sector and 28.03 ± 7.26 years for the healthcare workers. More than half (60.3%) of the healthcare workers were in the 18–26 age group. For the service sector, 73.8% of male participants and 1.2% of female participants were in this age group.

While no difference was found between occupational groups and the FCV-19S score in the service sector ($p=0.125$), there was a significant correlation between occupational groups and the FCV-19S score in the healthcare sector ($p=0.015$). The FCV-19S median value of midwives was 21, and it was higher than those of other occupational groups were (Table 1).

The FCV-19S median value was 14 for the service sector and 17 for the healthcare sector. The mean FCV-19S score of the healthcare workers who responded, “I sometimes comply with rules and precautions,” was very low when compared with those of the participants who fully

Table 1 Comparison of FCV-19S scores of service and healthcare sector workers based on occupational groups

FCV-19S					
	<i>n</i>	Mean \pm SD	Median	25–75%	<i>p</i>
Service sector	(309)				
Office-workplace workers	87	6.99 \pm .75	16.00	11.00–21.00	0.125*
Workers providing home services	36	6.79 \pm 1.13	12.00	8.25–18.50	
Workers providing services for community at their workplaces	160	6.69 \pm 0.53	13.00	9.00–19.00	
Community volunteers	26	6.96 \pm 1.37	12.50	9.00–20.25	
Healthcare sector	(426)				
Nurses	307	17.83 \pm 6.87	17.00	13.00–23.00	0.015*
Midwives	35	20.46 \pm 6.81	21.00	15.00–26.00	
Physicians	13	20.34 \pm 10.18	19.00	11.00–31.50	
Emergency medical technicians and paramedics	15	16.00 \pm 6.79	14.00	10.00–20.00	
Technicians	15	16.73 \pm 7.61	15.00	8.00–25.00	
Health officers	12	16.83 \pm 6.09	16.50	11.75–21.00	
Medical secretaries/officers/patient admission staff	11	14.91 \pm 5.52	14.00	10.00–21.00	
Other (managers, hospital cleaning staff)	18	13.44 \pm 5.17	13.50	8.00–16.25	

*Kruskal–Wallis test

complied with the rules and those who strove to comply with them ($p < 0.05$). The mean FCV-19S scores of those who thought they had COVID-19 symptoms due to stress or panic were higher among the healthcare workers ($p < 0.05$). While the FCV-19S scores of those whose relatives had caught COVID-19 and whose relatives had died due to COVID-19 were higher among the healthcare workers, there was no statistical difference between them. However, for the service sector employees whose relatives had caught the virus ($p = 0.003$) and whose relatives had died due to COVID-19 ($p = 0.001$), the FCV-19S scores were higher. The FCV-19S scores of those whose overall wellbeing deteriorated when compared with previous months were found to be higher among the workers in both sectors ($p < 0.001$, and $p < 0.001$, respectively). Likewise, the FCV-19S scores of those who did not have future concerns among the workers in both sectors were lower than those whose concerns increased or decreased ($p < 0.001$ and $p < 0.001$, respectively) (Table 2).

The number of those who said that they never used masks was three in the service sector, whereas there was no participant who gave this answer among the healthcare sector workers; the FCV-19S scores of the healthcare sector workers who said that they always used masks were higher ($p = 0.014$) (Table 3).

Similarly, there were five people in the service sector who indicated that they never washed their hands, whereas no one gave this answer in the healthcare sector. The FCV-19S scores of the participants in the service sector who stated that they never washed their hands and those in the healthcare sector who indicated that they partially washed their hands were lower than those of the others ($p < 0.05$ in both groups). The FCV-19S scores of the healthcare workers who never used gloves were lower than those of the others ($p = 0.007$). In addition, the FCV-19S scores of the healthcare workers who took a bath upon getting home ($p = 0.023$) and those who changed clothes upon getting home ($p = 0.011$) were higher (Table 3).

Table 4 shows the impact of age, gender, loss of relatives due to COVID-19, and relatives' getting sick due to COVID-19 on the FCV-19S scores of healthcare and service sector employees. The FCV-19S scores of the women during the COVID-19 pandemic were found to be 2.77 times higher than those of men ($p < 0.05$). Similarly, having a relative who got sick due to COVID-19 increased the FCV-19S scores by 1.319 times ($p < 0.05$).

According to the results of the analysis in the healthcare sector, the FCV-19S scores of the participants aged 45 years and older were 4.041 times higher than those of participants in the 18–24 age group ($p < 0.05$). The FCV-19S scores of the women during the COVID-19 pandemic were 2.595 times higher than those of men ($p < 0.05$).

Discussion

In this study, the fear of COVID-19 of the individuals who were actively working during the COVID-19 pandemic as well as their compliance with the preventive measures during the pandemic were investigated. In the study, the FCV-19S median score was found to be 14 for the healthcare workers and 17 for the service sector employees. The FCV-19S scores differed based on the profession and were higher among healthcare sector workers. When the findings from other countries were examined, it was found that the FCV-19S score of the nurses was 19.92 in the Philippines and that 63.2% of the nurses in China had strong fears (the scale scores between 30 and 40) and 28% had moderate fears (the score scores between 19 and 29) (Hu et al. 2020). In the present study, the FCV-19S scores of the healthcare workers were lower when compared with the scores in China despite variation in connection with other countries. It is believed that factors such as countries' readiness for the COVID-19 pandemic, ease of access to communication technologies, fast transmission of information, advanced health technology, health resources, achievements in the management of the pandemic contribute to lower levels of fear in this process. In fact, the first case in Turkey was reported approximately 3 months later than that in China. In this process, the scientific developments were monitored, and the Ministry of Health took the necessary measures by developing diagnosis, treatment, follow-up, and contact tracing procedures against a possible outbreak. Thus, it can be said that devoted and successful management work and readiness have prevented fear levels from increasing.

Healthcare workers are expected to experience more fear than all other professional groups. Lu et al. (2020) found that the rate of experiencing moderate and strong fear was higher among healthcare staff than that among the administrative staff (70.6 vs. 58.4%). Chaudhary et al. 2020 found that almost 94% of oral health workers were in fear of getting infection compared to 51% non-clinical workers. In the present study, midwives were found to be more likely to experience fear than other health professionals were. In the literature, no such finding was reported for midwives, although it was reported that nurses experienced fear and that the healthcare staff working in the hospital experienced more fear than the administrative staff and that the healthcare staff who were in close contact with infected patients experienced more fear, anxiety, and depression than other non-clinical staff did (Hu et al. 2020; Lu et al. 2020). Although the curriculum for midwifery focuses mainly on pregnancy and childbirth, they are often employed as nurses in hospitals in Turkey (Ministry of Health 2018). During the pandemic, even

Table 2 The distribution of the FCV-19S scores related to the covid-19 pandemic experience among the participants from the service and healthcare sectors

	FCV-19S					Healthcare sector				
	Service sector									
	<i>n</i>	Mean ± SD	Median	25–75%	<i>p</i>	<i>n</i>	Mean ± SD	Median	25–75%	<i>p</i>
Compliance with rules and precautions (309)	(309)	14.95 ± 6.83	14.00	9.00–20.00		(426)	17.73 ± 6.99	17.00	12.00–23.00	
Full compliance	123	14.76 ± 6.69	13.00	9.00–21.00	0.820*	173	17.76 ± 7.09	16.00	12.00–23.00	0.031*
Striving for compliance	178	15.10 ± 6.93	14.00	9.00–20.00		250	17.83 ± 6.87	17.50	13.00–22.00	
Occasional compliance	7	15.00 ± 7.75	12.00	7.00–21.00		3	7.67 ± 1.16	7.00	7.00–	
No compliance	1	9.00	–	–		–	–	–	–	
Losing any relative due to COVID-19 (293)						(410)				
Yes	19	19.16 ± 5.35	21.00	15.00–22.00	0.001*	36	19.06 ± 6.81	19.00	13.00–23.75	0.180*
No	274	14.57 ± 6.77	13.00	9.00–19.00		374	17.39 ± 6.91	17.00	12.00–22.00	
Having a relative with COVID-19 (286)						(396)				
Yes	56	17.23 ± 7.04	18.00	11.00–22.00	0.003*	214	18.23 ± 6.95	18.00	13.00–23.00	0.60*
No	230	14.13 ± 6.59	12.00	9.00–19.00		182	16.93 ± 6.83	16.00	11.00–22.00	
Exhibiting COVID-19 symptoms (34)						(170)				
Due to general COVID-19 symptoms	26	18.39 ± 6.27	17.50	14.75–21.50	0.059**	146	19.62 ± 6.87	20.00	14.00–25.00	0.030**
Other (Psychologically/due to panic and fear)	8	15.75 ± 7.85	14.50	7.75–24.75		24	23.00 ± 6.82	23.50	17.75–28.00	
Having COVID-19 test (309)						(426)				
No, did not have	283	15.01 ± 6.88	14.00	9.00–21.00	0.765*	213	17.97 ± 6.97	17.00	13.00–23.00	0.474*
Yes, had	26	14.15 ± 6.38	13.50	8.50–18.25		213	17.49 ± 7.01	17.00	12.00–23.00	
Overall wellbeing (300)						(422)				
Increased	42	13.00 ± 6.17	11.50	7.75–17.00	<0.001*	24	13.54 ± 7.59	11.00	8.00–17.50	<0.001*
Has not changed	180	14.14 ± 6.18	13.00	9.00–19.00		168	16.26 ± 7.01	15.00	11.00–21.00	
Decreased	78	17.86 ± 7.44	18.00	11.00–23.00		230	19.23 ± 6.50	19.00	14.00–24.00	
Future concern (294)						(417)				
Increased	137	16.66 ± 7.03	16.00	10.50–21.00	<0.001*	278	19.18 ± 6.89	19.00	14.00–24.00	<0.001*
Has not changed	126	13.37 ± 6.04	12.00	8.00–17.00		112	14.46 ± 6.13	14.00	9.00–18.00	
Decreased	31	16.68 ± 7.46	14.00	11.00–23.00		27	18.67 ± 6.45	17.00	13.00–22.00	

* Kruskal–Wallis test

**Mann–Whitney *U* test

Table 3 Distribution of the FCV-19S scores related by preventive measures taken during the pandemia among the participants from the service and healthcare sectors

	FCV-19S									
	Service sector					Healthcare sector				
	<i>n</i>	Mean ± SD	Median	25–75%	<i>p</i>	<i>n</i>	Mean ± SD	Median	25–75%	<i>p</i>
Using a mask										
No compliance	3	8.67 ± 2.89	7.00	7.00	0.298*	–	–	–	–	0.014*
Partial compliance	32	14.00 ± 6.34	12.00	9.00–20.50		5	13.80 ± 2.95	14.00	11.50–16.00	
Moderate compliance	46	14.15 ± 7.17	12.00	7.00–21.00		23	15.00 ± 7.09	13.00	9.00–22.00	
Usual compliance	74	15.78 ± 6.98	15.00	9.00–21.00		71	16.24 ± 6.74	15.00	10.00–20.00	
Full compliance	145	14.95 ± 6.82	14.00	9.00–19.00		324	18.29 ± 6.94	18.00	13.00–23.00	
Washing hands										
No compliance	5	8.40 ± 2.19	7.00	7.00–10.50	0.006*	–	–	–	–	0.043*
Partial compliance	16	12.44 ± 5.65	10.50	7.50–17.00		6	11.33 ± 4.23	11.50	7.00–14.75	
Moderate compliance	39	13.03 ± 6.56	11.00	7.00–17.00		16	15.88 ± 6.39	16.00	9.50–19.75	
Usual compliance	69	14.46 ± 6.26	14.00	9.00–18.00		63	16.86 ± 6.96	16.00	12.00–22.00	
Full compliance	167	15.78 ± 7.17	15.00	10.00–21.00		332	18.08 ± 6.96	18.00	13.00–23.00	
Using gloves										
No compliance	55	14.80 ± 7.36	12.00	9.00–21.00	0.492*	35	14.74 ± 5.62	14.00	10.00–19.00	0.007*
Partial compliance	57	13.14 ± 5.14	12.00	9.00–18.00		48	16.81 ± 5.87	17.00	13.00–20.00	
Moderate compliance	62	15.15 ± 6.28	14.00	10.00–19.00		54	15.85 ± 6.21	15.00	10.75–22.00	
Usual compliance	65	15.92 ± 8.02	16.00	8.50–21.50		113	18.89 ± 7.63	18.00	13.00–25.00	
Full compliance	60	14.68 ± 6.51	14.00	9.25–19.00		172	18.34 ± 6.97	18.50	13.00–24.00	
Taking a bath when coming home										
No compliance	11	13.64 ± 6.09	12.00	7.00–21.00	0.220*	2	8.00 ± 1.41	8.00	7.00	0.023*
Partial compliance	49	12.78 ± 5.57	11.00	8.00–17.50		19	15.37 ± 7.13	14.00	9.00–22.00	
Moderate compliance	72	15.75 ± 6.89	15.00	10.00–21.00		46	16.37 ± 6.08	15.50	11.75–22.00	
Usual compliance	87	15.15 ± 6.88	13.00	9.00–21.00		104	16.97 ± 6.65	16.00	12.00–22.00	
Full compliance	81	15.02 ± 7.46	13.00	8.00–20.00		246	18.44 ± 7.07	18.00	13.00–24.00	
Changing clothes when coming home										
No compliance	8	11.88 ± 7.16	8.00	7.00–18.75	0.337*	1	7.00	7.00	7.00	0.011*
Partial compliance	28	12.82 ± 5.61	11.00	8.25–17.50		10	12.70 ± 5.64	11.00	9.00–14.75	
Moderate compliance	55	14.67 ± 6.49	14.00	9.00–20.00		19	15.53 ± 6.45	15.00	11.00–19.00	
Usual compliance	61	13.74 ± 6.53	11.00	9.00–17.00		67	16.7 ± 7.17	16.00	10.00–23.00	
Full compliance	146	15.82 ± 7.13	15.00	9.75–21.00		319	18.19 ± 6.85	18.00	13.00–23.00	
Social distancing with clients/patients										
No compliance	11	14.90 ± 8.61	11.00	7.00–21.00	0.955*	8	13.13 ± 5.82	11.50	7.50–19.25	0.150*
Partial compliance	25	14.30 ± 6.82	12.00	8.00–19.00		29	18.56 ± 8.01	16.00	12.50–26.50	
Moderate compliance	61	14.51 ± 6.59	13.00	7.50–21.00		40	15.83 ± 6.09	15.00	10.25–20.00	
Usual compliance	75	14.69 ± 6.47	14.00	10.00–18.00		99	18.23 ± 6.82	18.00	14.00–23.00	
Full compliance	125	15.26 ± 7.19	14.00	9.00–20.00		220	17.82 ± 7.04	17.00	12.00–23.00	
Social distancing with colleagues										
No compliance	22	14.82 ± 7.27	13.00	8.00–21.25	0.171*	15	13.33 ± 5.68	12.00	7.00–19.00	0.075*
Partial compliance	27	12.67 ± 6.43	11.00	7.00–18.00		37	18.38 ± 7.03	17.00	14.00–23.50	
Moderate compliance	68	14.09 ± 6.63	12.00	8.25–20.25		88	17.17 ± 6.29	17.00	13.00–22.00	
Usual compliance	76	15.29 ± 6.71	14.50	9.25–19.00		134	18.59 ± 6.98	18.00	13.00–23.00	
Full compliance	102	15.69 ± 6.95	15.00	9.75–20.00		141	17.72 ± 7.45	16.00	12.00–23.50	
Using disinfectant/cologne										
No compliance	9	17.78 ± 9.15	18.00	8.00–27.00	0.112*	–	–	–	–	0.055*
Partial compliance	18	11.22 ± 4.72	10.50	7.00–13.25		10	12.50 ± 6.38	10.50	7.75–14.75	
Moderate compliance	55	14.09 ± 6.30	12.00	8.00–21.00		38	16.58 ± 6.70	16.00	10.75–22.00	

Table 3 (continued)

	FCV-19S									
	Service sector					Healthcare sector				
	<i>n</i>	Mean ± SD	Median	25–75%	<i>p</i>	<i>n</i>	Mean ± SD	Median	25–75%	<i>p</i>
Usual compliance	64	15.00 ± 7.08	14.00	9.00–19.00		92	18.15 ± 7.15	17.00	13.25–22.00	
Full compliance	153	15.36 ± 6.94	14.00	9.00–20.50		272	17.87 ± 6.90	17.00	12.00–23.00	

*Kruskal–Wallis test

non-clinical health workers were assigned to active combat against the disease. In this regard, it is suggested that the midwives' lack of knowledge of medical treatment, care, and infection control has played a role in their having more fear than nurses. Indeed, the lack of experience concerning infectious diseases was reported as the cause of fear among the nurses working in risky places (frontline) have no experience of infectious diseases as a cause of fear during the COVID-19 outbreak in China (Hu et al. 2020). Midwives were followed by physicians as health workers with a high level of fear. As a professional group that first encounters the patient population, diagnoses, and follows up the case, physicians work under uncertainty, which can exacerbate their fears.

The healthcare workers were characterized by a high level of compliance with precautionary measures because of the conditions they were working in. A study in China reported that 85% of healthcare workers were fearful of infection with the disease and that 89.7% adhered to preventive measures (Zhang et al. 2020). In Thailand, 95.6% of healthcare workers washed their hands, 93.1% used masks and personal protective equipment, 82% practiced social distancing in hospital, and 78% practiced social distancing in society as compliance with precautions (Apisarntharak et al. 2020). In Afghanistan, it was observed that 98% of healthcare workers used gloves and masks, 76% used disposable aprons, 83% used eye protection, 94% washed their hands regularly, and 63% used N95 facemasks as part of the pandemic measures (Raghavan et al. 2020). However, during the Middle East Respiratory Syndrome (MERS) outbreak as a previous pandemic, the level of compliance with measures such as handwashing (60.3%), using surgical masks, or using N95 masks if necessary (less than half of the participants) by healthcare workers was lower when compared with the measures taken during the COVID-19 pandemic (Alsaifi and Cheng 2016). It is argued that this was because COVID-19 spreads faster than the MERS pathogen.

In the literature, it was reported that as a reduction in risky behavior, fear ensured greater compliance with preventive strategies such as social distancing and handwashing and the use of masks and personal protective equipment (Apisarntharak et al. 2020; Cawcutt et al. 2020; Harper

et al. 2020; Oh et al. 2020; Sasaki et al. 2020). In the present study, there was a significant correlation between the level of fear and the behavior of compliance with precautions in the healthcare workers. The level of fear was the lowest in those who reported rare compliance with measures. Among the healthcare workers, there was no one who did not wash hands at all or wear a mask when necessary. However, there were individuals who did not wear a mask (1%) or did not wash hands when necessary (1.6%) among the service sector employees. This difference between occupational groups in terms of compliance with precautions is believed to be due to the obligation to use masks and gloves in hospitals, sociodemographic variables, knowledge about the disease, direct contact with patients, risk perceptions, and the resulting fear-related behavior change with regard to adherence to measures.

It is important that individuals should not experience the fear of COVID-19 at the level of panicking. It is believed that both insubstantial and exaggerated fear negatively affects mental health. Indeed, among the workers in both sectors, the fear of COVID-19 of those whose wellbeing declined in comparison with that in the past was found to be high. In addition, the healthcare workers who fallaciously reported to have COVID-19 symptoms experienced more fear than those who exhibited COVID-19 symptoms. In this regard, it is believed that it is critical to control the level of fear in employees.

In the present study, the regression model established to test the effect of age, gender, losing relatives due to COVID-19, and having relatives with COVID-19 on the fear of COVID-19 was statistically significant. Despite demographic differences, the fear of COVID-19 and the behavior of preventive intervention are more likely to allow a person to develop the ability to cope. Fear can accelerate the adoption of COVID-19-preventive behaviors. These results are supported by the effect of fear and demographic factors on the levels of preventive behaviors of individuals in the current literature (Gamma 2019). As age increased in the healthcare workers, the level of fear increased. It is believed that this was because the healthcare workers were able to assess well the relationship between advanced age and mortality because of COVID-19. In both sectors,

Table 4 The effect of age, gender, losing any relative due to covid-19 and having a relative with covid-19 on the FCV-19 s scores of the service sector and healthcare sector employees

	Service sector						Healthcare sector					
	B	Std. error	B	P	95% CI		B	Std. error	B	P	95% CI	
					Lower	Upper					Lower	Upper
(Constant)	13.253	0.759		<0.001	11.760	14.746	13.927	0.927		<0.001	12.104	15.749
Between 25–34 years old	0.204	0.919	0.015	0.824	-1.604	2.013	0.421	0.734	0.030	0.566	-1.021	1.863
Between 35–44 years old	1.484	1.122	0.084	0.187	-0.724	3.692	1.148	1.067	0.055	0.283	-0.950	3.245
45 years old and ↑	0.010	1.322	0.000	0.994	-2.592	2.612	4.041	1.661	0.120	<0.05	0.777	7.306
Female	2.779	0.875	0.179	<0.05	1.057	4.501	3.595	0.864	0.201	<0.001	1.897	5.292
Losing any relative due to Covid 19	0.405	0.667	0.039	0.544	-0.908	1.718	0.362	1.230	0.014	0.768	-2.054	2.779
Having a relative with Covid 19	1.319	0.525	0.160	<0.05	0.286	2.351	0.688	0.679	0.049	0.312	-0.647	2.022

R: 0.265; R²: 0.052

F: 3.812; p < 0.05

R: 0.239; R²: 0.043

F: 4.219; p < 0.001

^aDependent variable: Total FCV-19S Score

^bReference categories: Being Aged between 18 and 24 Years Old; Being Male; Not losing relatives due to COVID-19; Not having a relative with COVID-19

gender appeared to have an effect on the fear of COVID-19. Women experience more fear when compared with men. Yet, although the risk of death due to COVID-19 is higher for men than that for women (Caramelo et al. 2020; Jin et al. 2020), women perceived themselves at greater risk. Similar results were reported in the literature (Bitan et al. 2020; Reznik et al. 2020; Sakib et al. 2020; Saleem et al. 2020; Yıldırım et al. 2020; Zhong et al. 2020).

Conclusion

There was a significant correlation between having or losing relatives with COVID-19 and the fear of COVID-19 among the service sector employees, whereas this correlation was not significant among the healthcare workers. During the pandemic, the healthcare workers were isolated from their families, but the workers in other sectors continued to stay in their own houses. In this regard, the fear of infecting relatives or losing relatives may have caused more fear in the service sector employees. These results help us determine the relationship between the fear experienced by healthcare workers and workers in other sectors during the pandemic and their compliance with preventive measures. The healthcare workers need more support in fear management than those engaged in other professions did, and it is recommended that raising the awareness of service sector employees in terms of compliance with preventive measures should be prioritized.

Limitations

The sample group does not fully represent the working population in the country. The study does not contain multifaceted measurements or assessments of the emotional aspects of social norms and values regarding the fear of COVID-19. Another limitation of the study is that the results obtained from the research were obtained from the self-reports of the participants.

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Declarations

Conflict of interest The authors declare no competing interests.

Ethical approval Ethical approval from Ethics Commission of Yıldırım Beyazıt University in Ankara (84892257-604.01.02-E.15646) and necessary permits from the Ministry of Health have been obtained through an online application. Participation in the study was voluntary.

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