Knowledge, Attitude and Anxiety Levels About COVID-19 Among Healthcare Workers at Ankara City Hospital, Türkiye

Ankara Şehir Hastanesi'nde Görev Yapan Sağlık Personelinin COVID-19 ile ilgili Bilgi, Tutum ve Anksiyete Düzeyinin Değerlendirilmesi

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ABSTRACT

Introduction: *We aimed to assess the present knowledge, attitude and anxiety levels of coronavirus disease 2019 (COVID-19) among healthcare workers at Ankara City Hospital.*

Materials and Methods: *The study was implemented in the form of an online survey, based on voluntary participation and conducted on healthcare workers at the Ministry of Health Ankara City Hospital by using convenience sampling and snowball method between 30 May-2 July 2020. There were 28 questions on knowledge and 8 questions on attitude. The Beck Anxiety Inventory (BAI) was used to measure the anxiety level of the participants. The results were analyzed using the SPSS program.*

Results: *Of the participants, 75% were females, 61.25% were nurses/midwives, and mean age was 34.5 ± 10.1 years. A significant portion of the participants (84.50%) had a moderate or adequate level of knowledge. The highest knowledge score in terms of their professions are doctors, followed by nurses/midwives. The most used resource (71.25%) by our participants was the Ministry of Health's web page, posters and brochures. The knowledge adequacy of those who have a case algorithm is 1.8 times. Of the participants, 61.0 % demonstrated a positive attitude. 25.25% were gauged to have severe and moderate anxiety. Of the participants, 42.39% stated that anxiety causing reason was the future of their family in case of death in our study. The anxiety score of the female participants was higher than that of the men, young people were higher than the other age groups. There was no significant correlation between the level of knowledge and attitude; whereas a negative, weak correlation was identified between the level of knowledge and anxiety, and between attitude and anxiety.*

Conclusion: *Although the knowledge level of the participants was found to be adequate, in-service training on infection control measures, especially on the use of personal protective equipment should be continued using official information, such as algorithms are designed and other sources by the Ministry of Health. Health workers, especially women and young people, should be monitored psychologically, treated and social support for them should be increased during the pandemic. Increasing knowledge and positive attitudes may be contribute to decrease anxiety scores.*

Key Words: Anxiety; COVID-19; Health care worker; Knowledge; Pandemic

ÖZ

Ankara Şehir Hastanesi'nde Görev Yapan Sağlık Personelinin COVID-19 ile ilgili Bilgi, Tutum ve Anksiyete Düzeyinin Değerlendirilmesi

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Giriş: Bu çalışmada Ankara Şehir Hastanesi'nde görev yapan sağlık personelinin, COVID-19 ile ilgili mevcut bilgi, tutum ve anksiyete düzeylerini değerlendirmek amaçlanmıştır.

Materyal ve Metod: Çalışma, kolaylıkla bulunabileni örnekleme ve kartopu yöntemi kullanılarak 30 Mayıs-2 Temmuz 2020 tarihleri arasında Ankara Şehir Hastanesi'ndeki sağlık personeline gönüllülük esaslı bir online anket çalışması şeklinde uygulanmıştır. Bilgi ile ilgili 28, tutum ile ilgili sekiz soru oluşturulmuştur. Katılımcıların anksiyete düzeylerini ölçmek için Beck Anksiyete Ölçeği kullanılmıştır. Elde edilen sonuçlar SPSS istatistik programı ile analiz edilmiştir.

Bulgular: Katılımcıların %75.0'i kadın, %61.25'i hemşire/ebe ve yaş ortalaması 34.5 ± 10.1 yıldı. Ankete katılanların önemli bir kısmı (%84.50) orta ve yeterli bilgi düzeyine sahipti. En yüksek bilgi düzeyi sırasıyla doktorlarda ve hemşire/ebelerde belirlendi. Katılımcılar tarafından en fazla kullanılan bilgi kaynağı, Sağlık Bakanlığı'nın internet sayfası, afiş, broşürü idi.Vaka algoritması bulunanların bilgi yeterliliği 1.8 kattı. %61.0'i pozitif tutum sergiledi. %25.25'inin şiddetli ve orta şiddette anksiyetesi olduğu ölçümlendi. Katılımcıların %42.39'u, ölümü halinde ailesinin geleceği konusunun çok fazla kaygı yaptığını belirtti. Kadınlarda ve gençlerde anksiyete düzeyi daha yüksek bulundu. Bilgi düzeyi ile tutum arasında anlamlı bir ilişki bulunmazken bilgi düzeyi ile anksiyete arasında ve tutum ile anksiyete arasında negatif, zayıf bir korelasyon saptandı.

Sonuç: Katılımcıların bilgi düzeyleri yeterli bulunmakla birlikte özellikle kişisel koruyucu ekipman kullanımı olmak üzere infeksiyon kontrol önlemleri ile ilgili Sağlık Bakanlığı tarafından tasarlanan algoritmalarla resmi bilgilere dayanan hizmet içi eğitimler devam ettirilmelidir. Salgın boyunca sağlık çalışanları özellikle de kadınlar ve gençler ruhsal açıdan aktif olarak izlenmeli, desteklenmeli, tedavi edilmeli ve sosyal destek artırılmalıdır. Artmış bilgi ve pozitif tutum, anksiyete puanının azaltılmasına katkı sağlayabilecektir.

Anahtar Kelimeler: Anksiyete; Bilgi; COVID-19; Pademi; Sağlık personeli

INTRODUCTION

The virus causing COVID-19, which was first reported in December 2019, was determined to be a new coronavirus. It was named severe acute respiratory syndrome Coronavirus-2 (SARS-CoV-2), and an epidemic started at the end of December 2019 in the city of Wuhan in the Hubei province of China. As of 27 June 2021, 179.686.071 cases and 3.899.172 deaths were seen in 220 countries and territories in the world. In Türkiye, the first case was seen on March 11, 2020, and the first death was reported on March 17th. As of the same date, a total of 5.409.027 cases and 49.576 deaths were seen in our country[1,2].

Healthcare workers are at higher risk than the general population due to having long and repetitive contact with patients known or unknown to be infected with COVID-19. However, the knowledge and attitude acquired about the disease will affect the prevalence of infection among health care personnel, therefore, wrong information and attitude will increase the risk of infection. The low level of knowledge of healthcare professionals may cause delays in the diagnosis, treatment, surveillance and isolation of patients with COVID-19, and thus the rapid spread of the infection.

The COVID-19 pandemic has created an unprecedented physical and mental stress on people around the world, but especially on

healthcare professionals. Healthcare workers have been exposed to both physical and mental stress due to the anxiety of exposure to the virus, the concern of carrying the disease back to their families and loved ones, long working hours, psychological stress, fatigue, burnout, stigma, physical violence and ethically compelling decisions concerning the sharing of the workload[3]. For this reason, in addition to knowledge and attitude, the anxiety condition of the staff under this stress was evaluated at Ankara City Hospital, one of the most important pandemic hospitals in Türkiye.

At such a time when the need for healthcare personnel is very high, it is assumed that these growing concerns reduce their efficiency. As a matter of fact, since April 8th, the Ministry of Health has implemented a mobile application called RUHSAD, to offer the opportunity to interview a team of voluntary psychiatrists to protect the mental health of healthcare personnel in the process of combating COVID-19[4].

This study was conducted in the largest hospital in Europe, Ankara City Hospital. It has 9300 healthcare personnel, 3810 beds, 131 operation rooms and the largest laboratory in Türkiye5].

MATERIALS and METHODS

This study is a single-center, descriptive epidemiological study designed to determine the knowledge, attitude and anxiety levels of healthcare workers who work at Ankara City Hospital and agreed to participate in the study.

Convenience sampling and snowball method were used for the research and 400 surveys were collected between May 30 and July 2, 2020. As a method of data collection an online survey (Google Form) was created and a pre-test of this survey was done and the link of the questionnaire was distributed through WhatsApp groups. The survey was prepared anonymously and at the beginning, information about the study was given and participation was applied on a voluntary basis.

For the study, approval was obtained from the Ministry of Health and the Ethics Board of Ankara City Hospital, and all procedures in this study were carried out in accordance with the Declaration of Helsinki of 1964. In the study, all data was anonymously recorded and data security was ensured.

The survey was designed as sequential questions consisting of various sections. It consisted of three parts: demographic characteristics (12 topics), knowledge and attitude assessment (17 topics), determination of anxiety level (5 topics). While creating the questionnaire questions, the guidelines of the Ministry of Health, guidelines and the myths published by the WHO, and the examples of similar studies done before were taken as a basis.

In the demographic questions section, the participants' age, sex, marital status, having a child, profession, education level, professional experience, unit they work in the hospital, average working hours during the peak of the pandemic, having COVID-19 and chronic disease, presence of any relatives who had COVID-19 treatment or deceased from it were asked.

After the section of demographic questions, in the knowledge level section, knowledge level awareness was first examined and their trainings, training needs and information sources were asked. The questions that followed were for measurement and a total of 28 questions were asked, four of which were multiple choice and 24 of which were propositions. In these questions, incubation time, transmission routes, name of the virus, origin of the disease, reporting of the virus, resistance of the virus, concept of close contact, infectivity of asymptomatic people, infectivity level, immunity status, pneumonia vaccine, relevance of COVID-19 to 5G, garlic, hand washing, nose washing with salt water and bathing with hot water were asked. In addition, the effects of surface cleaning, hand dryers and UV lamps on cleaning were included in questions. Questions about the function of thermal cameras, main symptoms, storage of samples, detection of lung involvement, use of N95, personal protective equipment, treatment and vaccination were also included in the questionnaire.

In the knowledge questions, each correct

answer was scored as one point. In the analysis, the total knowledge scores of the participants, the values obtained by determining the cut-off value, and the values converted to percentages were used. Eighty percent was taken as the cut-off value and >80% was considered as good/adequate knowledge, 60-80% as medium knowledge, and <60% as low/inadequate knowledge.

Participants who believe to have partial or sufficient knowledge about COVID-19, believing that COVID-19 can be brought under control this year, willing to take part in a possible new epidemic after the COVID-19 pandemic, increase of their compliance with infection control measures after this disease, finding Hospitals' Infection Control Committee's studies sufficient, having had a seasonal flu vaccine in the last nine months as of the date of filling out the questionnaire, and thinking of getting a seasonal flu vaccine regularly in the future and thinking need of psychiatric/psychological help were evaluated as positive attitudes.

The attitude score was evaluated with positive answers as one point out of these eight questions. In the study, besides the attitude scores, four points were determined as the cut-off value according to the average attitude score, four and above were classified as positive attitudes, and scores below four points were classified as negative attitudes.

In the anxiety section, first of all, a situation determination was made by asking the participants whether they received psychiatric or psychological help due to depression or anxiety disorder before or after the pandemic, and their thoughts about the need for help in the current situation. In addition, a four-point Likert scale was used to determine the level of anxiety felt by the participants in the last two weeks. The Beck Anxiety Inventory (BAI) was used to measure the anxiety level of the participants. Beck Anxiety Inventory consists of 21 propositions and Likert scale answers are scored. This score was scored as "Not at all= 0", "Mildly, but it didn't bother me much= 1", "Moderately-it wasn't pleasant at times= 2", "Severely-it bothered me a lot= 3". Scores from the scale are considered as minimal anxiety/normal if they are between 0-7 points,

mild anxiety if they are between 8-15 points, moderate anxiety if they are between 16-25 points, and severe anxiety if they are between 26-63 points. Generally, it is recommended to start medical treatment for individuals above 16 points.

Demographic characteristics and mean, median, minimum and maximum values of knowledge, attitude and anxiety scores were reported using descriptive statistics. The normality distribution of the data was examined with the Kolmogorov-Smirnov test. Student's t test and One-Way Anova were used in normally distributed data to evaluate the relationship between continuous variables in the study, and Mann-Whitney U and Kruskal Wallis tests were used in data that did not show normal distribution. Chi-square test was used to compare categorical data. Inferential statistics including Spearman correlation were applied. p value of< 0.05 was considered statistically significant. In order to determine possible factors affecting knowledge and attitude scores, the Estimated Relative Risk-Odds Ratio (OR) was presented with a 95% confidence interval (95% CI) and the critical α value of 0.05 was considered statistically significant.

In addition, logistic regression analysis was performed in order to reveal the effect of each of the possible factors affecting knowledge and attitude on knowledge and attitude score independently from the others. In order to find the factors affecting the knowledge score, age group, child status, education level, educational need, professional experience, profession, case algorithm in the hospital were included in the model. In order to find the factors affecting the attitude score, age group, having COVID-19, knowledge proficiency, child status, professional experience and profession were added to the model. Backward Wald method was used in the model. The statistical significance limit was accepted as <0.05. The answers obtained from the questionnaire were transferred to Microsoft excel 2016 worksheet (.xlsx) and IBM SPSS version 23 database.

RESULTS

Three hundred (75.0%) of the participants

were females and 100 (25.0%) were males. Considering the age distribution of the people in the study, it was seen that 85 (21.25%) of them were under 25 years old, 102 (25.50%) of them were between 25-30 years old, 92 (23%) of them were between 31-40 years old, 98 (24.50%) of them were between 41-50 years old and 23 (5.75%) of them were over 50 years old. Mean age of the participants was 34.45 ± 10.12. Median age was 32 years, and it was determined that the youngest participant was 21 years old, and the oldest participant was 68 years old. Two hundred and twenty-one (55.53%) of the participants stated that they were married and 192 (48.12%) of them stated that they had children. Majority of our participants (61.25%) were nurses/midwives, and 64.25% had associate/bachelor's degree (Table 1).

Table 1. Demographic characteristics of participants

| Demographic Characteristics		n	%
Gender	Male	100	25.00
	Female	300	75.00
Age (Year)	<25 years	85	21.25
	25-30 years	102	25.50
	31-40 years	92	23.00
	41-50 years	98	24.50
	>50 years	23	5.75
Mean ± SD		34.5 ± 10.1	
Median (Min-Max)		32 (21-68)	
Marital status (n= 398)	Single	177	44.47
	Married	221	55.53
Status of having children (n= 399)	Yes	192	48.12
	No	207	51.88
Education level	High School	18	4.50
	Associate/bachelor's degree	257	64.25
	Master's degree/Doctorate	42	10.50
	Specialty	74	18.50
	Subspecialty	9	2.25
Profession	Specialist doctor	53	13.25
	Doctor/Asistant doctor	43	10.75
	Nurse/midwive	245	61.25
	laboratory technician	12	3.00
	Physiotherapist	9	2.25
	Anaesthesie technician/Operating room personnel	6	1.50
	Administrative personnel	15	3.75
	Other	17	4.25
Professional experience	≤5 years	172	43.00
	6-15 years	82	20.50
	16-25 years	73	18.25
	26 years or more	73	18.25
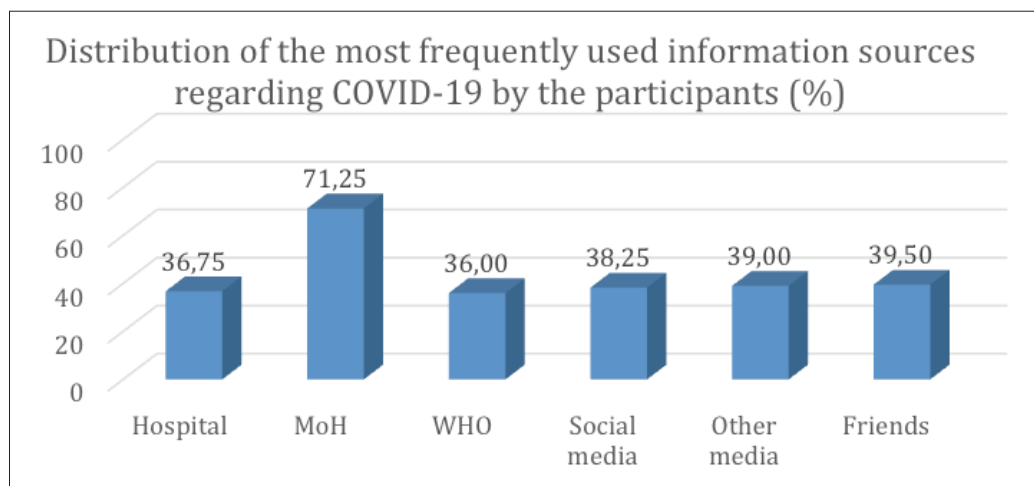
Figure 1. Distribution of the most frequently used information sources regarding COVID-19 by the participants (%).

One hundred and ninety-five (49.61%) of the participants worked in the hospital service or outpatient clinics with active COVID-19 case follow-up, 78 (19.85%) of them worked in the service or polyclinics without active COVID-19 case follow-up, 47 (12%) of them worked in the intensive care unit, 218 people (54.64%) declared that they worked nine hours a day or more during the peak period of the pandemic that was being experienced at the time of the survey. Seventy-nine (19.75%) of the study participants claimed to have at least one chronic disease. Among patients with chronic diseases, 19 people (24.05%) were found to have asthma/COPD, 14 people (17.72%) had more than one chronic disease. Nine of the participants (2.26%) had laboratory-confirmed COVID-19 disease, and 12 (3%) first-degree relatives were hospitalized/treated or died due to COVID-19. 244 (61%) respondents indicated that they are directly interested in medical services for COVID-19 patients.

Two hundred and seventy-seven (69.25%) employees reported that they had received in-service training for COVID-19. Those who need education (65%); most of them (21.25%) stated that they needed training in two subjects and 7.50% in all subjects. The topics that need training are 157 people's treatment methods (39.25%), 154 people's outbreak management (38.50%).

Eighteen participants (4.50%) used all the information sources in the options and most frequently (71.25%) used information source is the web page, brochures, posters of the Ministry of Health (Figure 1).

According to the correct answer rates of the participants in the pre-evaluation questions, it is known that the incubation period is the most known (90.75%) and N95 or FFP2 should be used is the least known (38.0%).

In the 24 propositions asked, participants correctly answered the following: 395 people (98.75%) the main symptoms of the disease, 387 people (96.75%) the definition of close contact, 381 people (95.25%) the presence of vaccine development studies, 380 people (95.0%) that it was necessary to report, and these were the most correctly answered questions among the other propositions. One hundred and sixty-three people (40.75%) correctly answered that UV lamps are not recommended for hand disinfection and 144 people (36.0%) correctly answered that this disease is a zoonotic disease, which are the least correctly answered propositions.

When the total knowledge scores were calculated by taking the cut-off value of 80%, it was determined that the knowledge level of 117 (29.25%) participants about COVID-19 was quite good/adequate, by the time the knowledge level of 221 (55.25%) participants was moderate and

62 (15.50%) participants level was found to be inadequate.

The most positive attitude of the participants was related to their self-evaluation of their level of knowledge about COVID-19 (95.0%), and the least positive attitude was related to getting seasonal flu vaccine in the last nine months (10.0%). Considering the positive attitudes of the participants with accordance of the scores they got, 244 people (61%) were found to have a positive attitude and 39% to have a negative attitude.

In order to determine the anxiety levels of the study participants, it was determined that the most worrying cause (42.38%) was the future of her family in the case of death. According to BAI, 207 (51.75%) of the healthcare professionals had minimal anxiety, which means they were in the normal group, 92 (23%) had mild anxiety, 48 (12%) had moderate anxiety and 53 (13.25%) was found to have severe anxiety. When the responses to the questions of Beck anxiety scale were evaluated, it was found that the majority of the participants (91.75%) declared the symptom they have never seen was "fainting", and most of the participants (9.50%) stated that the symptom that was hard for them to see on a serious level was "the fear that something terrible will happen".

The mean, median and minimum-maximum values of the participants' knowledge, attitude and anxiety scores are summarized in Table 2.

Variables were analyzed to affect the subjects' knowledge scores and attitude scores, according to these analyses when a logistic model was created. It was determined that one of the factors affecting knowledge proficiency most was professional experience. When all factors were controlled and compared with people from other professional groups, the knowledge proficiency of doctors was 2.7 times (95% CI= 1.3-5.4) and that of nurse-midwives 3.5 times (%95 CI= 1.3-5.4). When all other factors were controlled, having completed a specialization or medical subspeciality education was 8.2 times (%95 CI= 2.1-32.6) effective on knowledge proficiency compared to high school graduates. When all factors were controlled, the knowledge adequacy of those who have a case algorithm in the hospital was 1.8 times (95% CI= 1.1-3.0) than those without (Table 3).

When all other factors were controlled and compared with those over 50 years old, being in the 25-30 age range increased positive attitude 3.75 times (1.40-10.08) (p= 0.040). In addition, the factor of not having a COVID-19 infection alone was found to have a 9.15 (1.10-75.57) times on attitude (p= 0.040) (Table 4).

When BAI scores of the participants was evaluated, the anxiety score of the female participants was higher than that of the men (p= 0.007), and young people (<25 years) were higher than the other age groups (p= 0.019). The scores of the laboratory technicians and nurses/midwives were higher than the other professional groups (p= 0.017), working in the laboratory, intensive care unit and outpatient clinic or service with active case follow-up were found to be higher than other groups (p= 0.001). It was observed that the anxiety score increased as the working hours increased (p< 0.001).

No correlation was found between knowledge and attitude scores (r= 0.040, p= 0.424). However, a statistically significant and negative correlation was found between the knowledge score and the BAI score (r= -0.160, p= 0.001). A significant and negative correlation was also found between attitude and BAI score (r= -0.116, p= 0.020). Since the correlation coefficients were

Table 2. The mean and median (min-max) values of the participants' scores

Scoring title	Highest score possible	Mean ± SD	Median (Min-Max)
Knowledge score	28	20.15 ± 3.88	21 (6-27)
Attitude score	8	3.91 ± 1.27	4 (1-7)
BAI score	63	10.57 ± 11.28	7 (0-55)

Table 3. Factors affecting proficiency in knowledge

Factors	Adjusted Odds Ratio (OR$_{adj}$) (95% CI)	p
Professional experience		
26 years and more	**2.07 (1.08-3.95)**	**0.028**
16-25 years	**2.97 (1.45-6.09)**	**0.003**
6-15 years	**2.67 (1.37-5.20)**	**0.004**
≤5 years	Reference (Ref)	
Profession		
Specialist Doctor/ Doctor/Asistant doctor	**2.71 (1.35-5.45)**	**0.005**
Nurse/Midwife	**3.49 (1.30-9.40)**	**0.013**
Other	Ref	
Education		
Master's Degree/Doctorate	2.36 (0.67-8.21)	0.177
Specialty/Subspecialty	**8.18 (2.05-32.59)**	**0.003**
Associate's degree/Bachelor's degree	3.93 (0.72-21.38)	0.113
High School	Ref	
Need for Education		
No	1.66 (0.99-2.80)	0.057
Yes	Ref	
Case Algorithm at the Hospital		
Yes	**1.77 (1.03-3.04)**	**0.037**
No	Ref	
Constant	**0.079**	**<0.001**

Wald test (When age group and child status are controlled).

Table 4. Factors affecting positive attitude

	Adjusted Odds Ratio (ORadj) (95% CI)	P
Age Group*		
>50 years	Ref	
41-50 years	1.46 (0.56-3.77)	0.440
31-40 years	1.43 (0.55-3.73)	0.464
<25 years	1.68 (0.63-4.51)	0.302
25-30 years	**3.75 (1.40-10.08)**	**0.040**
COVID-19 Status		
Negative	**9.15 (1.10-75.57)**	**0.040**
Positive	Ref	
Knowledge Adequacy		
Adequate	1.35 (0.87-2.12)	0.186
Inadequate	Ref	
Constant	0.362	<0.001

Wald test (*When child status, professional experience and profession are controlled*).

between r= 0 and 0.40, the correlations found were accepted as weak correlations.

DISCUSSION

In this study conducted at Ankara City Hospital, which was involved in the process as a pandemic hospital, a remote online survey was conducted with voluntary participation, and the number of questionnaires was similar to the studies conducted with the similar methodology[6-10].

Participants of our study were health workers, of whom 300 (75.0%) were females and 100 (25.0%) were males. Due to the fact that women are usually employed especially in midwifery, nursing, patient care and other allied health services in the health sector, the proportion of women working in these professions is high in many countries[11,12].

Among the majority of the participants in the study, 257 (64.25%) were associate/bachelor's degree graduates, 245 (61.25%) were nurses/ midwives. In addition, 172 (43.0%) of them, the majority, were young personnel with five-year or less professional experience. It was also determined that most of the participants (41.9%) graduated with a bachelor's degree at a children's hospital in Egypt, 59.8% were nurses, and 59.2% had five years or less of professional experience[13].

When the health workers participating in our study were asked about the most needed training topics, the topics were indicated as treatment approaches (39.25%), epidemic management (38.50%) and virus characteristics (32.25%). The least needed topic was transmission routes (16.75%). At early stages, the need for scientific clarity of transmission routes is reduced compared to other issues, however information about treatment approaches, epidemic management and virus characteristics is still needed since they have not yet gained certainty in the process, and they continue to be investigated and that is an expected situation.

In this study, it was stated that the most used resource (71.25%) by our participants was the Ministry of Health's web page, posters and brochures. Similarly, in a study from England, most of the participants (43%) have used the

guide published by the Public Health Agency of England[14] This may allow us to think that increasing the official information of the Ministry of Health in Türkiye through various channels will be effective in increasing the level of knowledge of health workers.

In our study, 260 participants (65.0%) claimed to have sufficient information about COVID-19, 30.0% of whom claimed to have partial information. In the evaluation, it was determined that 84.50% of them had high and medium levels of knowledge, which is in line with similar studies[10,15-17]. In a study conducted among health professionals in Greece, 52.5% have claimed to have a sufficient level of knowledge, and 88.3% have been found to have a sufficient level of knowledge[18].

Of the respondents, 38.0% correctly answered the situations when N95 or FFP2 should be used, and 44.75% correctly answered the order of wearing protective equipment in the information pre-evaluation questions of the survey. It may be recommended to give priority to these issues in trainings.

According to this study, 244 people (61.0%) had positive attitudes towards COVID-19 in the attitude evaluation. In studies in Pakistan, Vietnam, Nepal and Ethiopia, attitude positivity has been found to be quite high compared to our study (86.5%, 90.0%, 53.4%, 65.7% respectively)[17,19-21]. These differences in rates may be due to the lack of a standard because scales are not used in attitude assessments, the different questions and scores developed by the researchers, and the cultural characteristics of the countries.

Among the questions regarding attitude assessment in our study, the subject with the lowest positive attitude was related to getting the seasonal flu vaccine in the last nine months (10.0%). The Studies conducted in WHO, European member countries show that the average seasonal flu vaccination rate of healthcare workers is <40%. Considering the studies conducted in our country, the rate was found to be 4.3%-42.3%[22]. In this study, which was carried out even in a large hospital such as Ankara City Hospital, various studies should be conducted to increase

the seasonal flu vaccine application among health personnel, especially "reasons for not having", due to the low rate of seasonal flu vaccination of health personnel and their current reluctance to the subject in the future.

The willingness of health personnel to work during the influenza pandemic period has been found to be between 23.1% and 95.8% in a review and meta-analysis[23]. In our study, the willingness of employees to take part in an epidemic was determined as 53.50%. Increasing in-service trainings and reducing their concerns will increase the willingness of health personnel to take part in the next epidemic or pandemic.

It was determined that those with the highest knowledge score in terms of their professions are doctors, followed by nurses/midwives. This is consistent with the results in the literature. [15,19,24] It was observed that as the education level and professional experience of the employees increase, their level of knowledge also increases.

The knowledge scores of those who stated there were case algorithms in the hospital for the intervention of a possible COVID-19 patient were higher than the others. Case algorithms have presented the information visually and concretely to the health personnel and seem to be effective. Developing more algorithms and using them in more areas, especially in crisis periods, will facilitate the work of health personnel.

In this study, the attitude score was found to be higher in those who did not have COVID-19 compared to those who did. This may make us think that those who have not had COVID-19 pay more attention to their attitudes, those who have had it are more relaxed psychologically and pay no attention.

When the participants were asked to rate the level of anxiety they have felt for the last two weeks regarding some topics as a preliminary assessment, 91 (23.10%) of the participants stated that the thought of having COVID-19 167 of them (42.39%) said that in case of their death caused them a lot of anxiety. In a cross-sectional study in Henan, China; 85% of the health personnel have stated that they were afraid of contracting the virus[15]. Besides, the most (42.39%) anxiety causing reason was the future of the family in case of death in our study. Therefore, it should be considered that this issue should be handled specifically for our country.

According to the studies in the literature, anxiety level among healthcare workers has been found similar with our results[25,26]. According to this study, there were 101 personnel (25.25%) who had moderate and severe anxiety, that is, who may need medical treatment.

Similar to this study, in various studies conducted, the rate of anxiety has been found to be higher in women[11,16,27-30] and being in the young age group were determined as factors that increase the level of anxiety[31,32].

In our study, a negative correlation was found between attitude and knowledge scores and anxiety scores. This is in line with the literature and expectations[20,33,34].

Health workers should be actively monitored, supported and treated when necessary, during a pandemic. It is recommended to create comprehensive strategies to support the mental health of the personnel who are working in the front lines and who will continue to work, and to establish support systems that constantly monitor the mental health and performance of the personnel in the management of health emergencies. It is considered necessary to monitor female health workers more closely psychologically and to support them socially during outbreaks and crisis periods.

ETHICS COMMITTEE APPROVAL

This study was approved by Republic of Türkiye Ankara City Hospital Clinical Research Ethics Committee No 1 (Date: 21.05.2020, Decision No: 629).

CONFLICT of INTEREST

The authors have no conflicts of interest to declare that are relevant to the content of this article.

AUTHORSHIP CONTRIBUTIONS

Concept and Design: EA, RG, TB

Data Collection or Processing: EA, BK, RG

Analysis/Interpretation: EA, RG, BK

Literature Search: EA, HÖ

Writing: EA, HÖ

Final Approval: All of authors

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