

# The perception concerning the COVID-19 pandemic: case of Turkey

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## ABSTRACT

**Objectives:** This study aims to evaluate the level of knowledge and perception of the Turkish society about the COVID-19 pandemic.

**Methods:** This cross-sectional study whose sampling consists of 903 adults.

**Results:** About half (49.6%) of the participants' information sources about COVID-19 composed of printed and visual media tools such as television, radio, newspaper, etc. 57.5% of the participants stated that their self-knowledge levels about COVID-19 were at a good level, whereas 19.7% of them at a very good level. 64.4% of the participants stated that their health would be seriously damaged if they get this virus; 58.9% of them thinks that this virus will severely damage their place of the resident; 50.9% of them stated that they trust that this crisis will be handled effectively by the health authorities of Turkey. Participants rated themselves an average of 8.7 points on compliance with COVID-19 measures. It was found that the participants had a 55% confidence in the Coronavirus Scientific Advisory Board (Turkey) and the World Health Organization (WHO) regarding COVID-19.

**Conclusions:** Like all over the world, health authorities also in Turkey have taken several measures in the context of fighting against the pandemic and they expect society to comply with these measures. The fact that individuals in the society fulfill their individual responsibilities by confirming the accuracy of the information took place in printed/visual and social media from reliable sources is an important factor in reducing the effects of infectious diseases.

**Keywords:** COVID-19, coronavirus, pandemic, public health, perception

Novel coronavirus (COVID-19, SARS-CoV-2), which was first detected at the end of December 2019 in Wuhan, China, and spread across the world in a short time, was announced by the WHO as a public health emergency on 30 January 2020, and as a pandemic on 11 March 2020 [1]. Global public health campaigns have been launched to reduce the spread of the virus [2]. Health authorities and governments

have begun to take serious measures to reduce the transmission of the disease [3]. Although it varies from country to country, domestic and international travel has been stopped, significant changes have come off in receiving education and manner of work, large events and workshops were banned and houses of workshops and shopping malls were shuttered.

Since it is a never-before-seen disease that is likely

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to result in death, COVID-19 had the potential to lead to chaos and fear among the public [4]. On the other hand, slowing down of the transmission also required significant behavioral changes in individuals [2]. Because it was a known fact that the knowledge and attitudes obtained by individuals towards a disease greatly affect the degree of obedience to personal protective measures and, consequently, the course of the disease [4]. Therefore, as of the occurrence of COVID-19, health authorities and governments have started to take an active role in printed/visual and social media to inform people correctly and to report responsibilities to individuals in the fight against the pandemic. For example, the Ministry of Health of Turkey established the Coronavirus Scientific Advisory Board on January 10, 2020, even though there were no cases or deaths in Turkey in that period. Scientific Board members aimed to inform the public about the course of the disease and the ways of prevention, via TV channels and media transparently, and to survive the outbreak with less damage.

It is known that there is a relationship between the way people perceive disease and the reactions to the disease and adaptation to the disease [5]. Widespread and constant participation in health-protective behaviors proposed by health authorities during the pandemic is critical for the successful management of COVID-19. The evidence acquired from previous contagious disease outbreaks points to the role of perceived risk, anxiety, media interest and information on individuals' health-protective behavioral intentions [6]. Getting exact information from various sources such as public health professionals, government, and media may raise people's awareness of risk and may consequently enable them to adopt preventive measures [4]. Health risk perception of public plays an important role in the adoption of these actions, in the emotions and daily habits of people [3]. It is also known that when people realize that they are vulnerable to risk, they have a higher motivation to apply to preventive health behaviors [7].

This study examines what kind of perception COVID-19 creates in Turkish people and what kind of an attitude it causes. At the end of the study, the level of knowledge, risk perception, and trust levels of Turkish people about COVID-19 will be revealed and in addition, it will be determined from which information sources they learned COVID-19. It is possible to state

that researching this subject, which is quite new as of now, in the sample of Turkey, will both contribute to the gap in the national and international literature and facilitate the comparison of the reactions of the societies about this pandemic. In this context, answers to the following questions were sought in this study:

- i. How do the demographic characteristics of the participants distribute?
- ii. What are the participants' COVID-19 sources of information?
- iii. What is the level of knowledge of the participants about COVID-19?
- iv. What are the measures taken by participants against COVID-19?
- v. What are the participants' perceptions of COVID-19 risk?
- vi. What are the levels of trust of the participants against individuals and institutions fighting against COVID-19?

## METHODS

### Design, Population & Sample Size and Setting

This study was designed in a cross-sectional design. The sampling of the study consists of adults aged over 18 years old, who agree to participate in the research, who live in Turkey and speak Turkish, who know how to use a mobile device or computer with internet access and who do not have any mental or physical disabilities. Bayesian sampling formula [8] was used to calculate the minimum sample size to participate in the research.

In the numerator of the formula, the value of  $(0.5 \times 0.5 = 0.25)$ , which has the highest  $(p.q)$  value, was

$n = \frac{N(p.q)}{(N-1).B^2} + (p.q)$	n:	Sample size
	N:	Population
	p:	Population rate or estimate
	q:	1-p
	B:	Tolerance level (acceptable margin of error)
	Z:	Credible intervals

taken as the basis. The population (N) of the research was taken as 83 million. In the denominator of the formula, the tolerance level (B) was taken as 5%. The fact that the studies conducted in the research are in a confidence interval is of great importance for the reliability of the research. The confidence interval generally accepted by the researchers is 95% ( $\pm 2.5$ ). Accordingly, Z value was taken as 1.96. Thus, the minimum

sample size of the study group was calculated as 384. The data of the study were collected between the dates of 01.05.2020-10.05.2020 by convenience sampling method and a total of 903 participants were reached.

**Data Collection Tools**

An electronic form was prepared by researchers through Google Forms as a data collection tool. This form was based on the survey form of McFadden *et al.* [9], whereas the survey was revised to make it more suitable for Turkish culture. The revised survey form includes a total of 7 chapters and 56 expressions as follows: demographic characteristics (10 expressions); the knowledge level of the society about COVID-19 (4 expressions); COVID-19 information sources (1 expression); the measures that can be taken against COVID-19 (20 statements); COVID-19 risk percep-

tion (11 expressions); the level of compliance with COVID-19 measures (1 statement); and trust (9 expressions).

**Ethical Considerations**

Ethics committee approval was obtained from the Social and Humanities Scientific Research and Publication Ethical Committee of the Uşak University (Decision no: E.15785) and Ministry of Health of Turkey, General Directorate of Health Services.

**Statistical Analysis**

The analysis of the data was carried out with SPSS. Within the scope of the study, basic descriptive statistics such as frequency, percentage, mean, standard deviation, minimum and maximum values were used.

**Table 1. Descriptive characteristics of participants (n = 903)**

	n	%		n	%
<b>Gender</b>			<b>Marital Status</b>		
Female	671	74.3	Married	348	38.5
Male	232	25.7	Single	555	61.5
<b>Family Type</b>			<b>Chronic Disease Status</b>		
Nuclear	800	88.6	Yes	159	17.6
Extended	103	11.4	No	744	82.4
<b>Level of Education</b>			<b>Place or Residence</b>		
≤ High School	213	24.0	Province	286	31.7
University	526	58.0	District	171	18.9
≥ University	164	18.0	Metropolitan	446	49.4
<b>Economic Level</b>			<b>Region of Residence</b>		
More than expense	218	24.1	West	728	80.6
Balanced	549	60.8	Central	152	16.8
Less than expense	136	15.1	East	23	2.5
<b>Age</b>			<b>Occupation</b>		
18-24	361	40.0	Student	347	38.4
25-34	206	22.8	Housewife	48	5.3
35-44	207	22.9	Retired	34	3.8
45 years and older	129	14.3	Civil servant	184	20.4
<i>Min.</i>		18	Private sector employee	165	18.3
<i>Max.</i>		67	Trades/self-employment	29	3.2
<i>Mean.-SD.</i>		31.2	Employer	19	2.1
<i>SD.</i>		± 11.4	Other	77	8.5

## RESULTS

In terms of the socio-demographic characteristics of the participants, the following results were obtained: Of the participants, 74.3% (n = 671) were females; 61.5% (n = 555) was single; 58.0% (n = 526) were university graduates; 40.0% were aged between 18-24 years old (n = 361, mean = 31.2 ± 11.4 years); 60.8% (n = 549) had a balanced income-expense level; 88.6% (n = 800) had a nuclear family type; 82.4% (n = 744) had no chronic disease; 49.4% (n = 446) live in a metropolitan; 80.6% (n = 728) live in the western side of Turkey; and 38.4% (n = 347) were students (Table 1).

In terms of participants' sources of information about COVID-19; it was found that 49.6% (n = 448)

of them get information via printed and visual media tools such as TV, radio, newspaper, etc.; while 30.7% (n = 277) of them use social media tools such as Facebook, Twitter, etc.; 19.4% (n = 175) of them use national and international official health authorities such as the WHO and the Ministry of Health; and 0.3% (n = 3) of them get information from their close circles like friends/neighbors/relatives. 57.5% (n = 519) of the participants evaluated their self-knowledge level about COVID-19 as good and 19.7% (n = 178) as very good. 98.9% (n = 893) of the participants correctly knew that COVID-19 was a respiratory disease caused by an infectious virus; while 98.2% (n = 887) of them correctly knew that the virus was transmitted by coughing or sneezing; and 68.4% (n = 581) of them correctly knew that there are no proven treatments or

**Table 2. Participants' COVID-19 information sources and knowledge levels (n = 903)**

	n	%
COVID-19 information sources		
Printed/visual media	448	49.6
Social media	277	30.7
State health authorities	175	19.4
Friend/neighbor/relatives	3	0.3
Knowledge level about COVID-19 (Self-assessment)		
Very weak	3	0.3
Weak	13	1.4
Medium	190	21.0
Good	519	57.5
Very good	178	19.7
Partial	5	0.6
Status of knowing the definition of COVID-19		
Correctly knows	893	98.9
Wrongly knows	6	0.7
Have no idea	4	0.4
Status of knowing the mechanism of transmission of COVID-19		
Correctly knows	887	98.2
Wrongly knows	12	1.3
Have no idea	4	0.4
Status of knowing the presence of vaccine and treatment for COVID-19		
Correctly knows	581	64.3
Wrongly knows	280	31.0
Have no idea	42	4.7

vaccines for COVID-19 at the moment (Table 2).

In terms of the measures taken by participants against COVID-19, the results were as follows respectively: to wash hands (99.8%, f = 901); to avoid close contact with patients with COVID-19 (99.3%, f = 897); to wear a mask (99.0%, f = 894); a balanced diet (98.9%, f = 893); to cover the cough or sneeze with a flexed elbow (98.8%, f = 892); to maintain the social distance (98.0%, f = 885); to use alcohol-based hand sanitizers (98.0%, f = 885); to ventilate home (97.9%, f = 884); to avoid touching eyes, nose, and mouth with unwashed hands (97.3%, f = 879); to stay home when sick (92.2%, f = 851); to use cologne (94.1%, f = 850); to be careful when opening a mail and cargo (93.7%, f = 846); to touch the frequently contacted places such as the door handle with elbows (90.2%, f = 815); to avoid using alcohol and smoking (90.1%, f = 814); to wear gloves (83.7%, f = 756); to do exercise regularly (81.1%, f = 732); to use herbal supplements (55.0%, f = 497); to wait for warmer weather (17.6%, f = 159); and to get the flu vaccine (11.6%, f = 105) (Fig. 1).

It was found that 36.9% (n = 333) of the partici-

pants **“agree”** with the expression of *“if I get COVID-19, my health will be seriously damaged”*; 63.7% (n = 576) of them **“strongly agree”** with the expression of *“I think COVID-19 is more serious than influenza in terms of risk”*; 30.2% (n = 273) of them were **“un-decided”** about the expression of *“I wouldn’t go to the hospital even if I got another disease due to the risk of getting COVID-19”*; 39.5% (n = 357) of them **“agree”** with the expression of *“COVID-19 will severely damage my place of resident”*; 38.9% of them (n = 352) **“agree”** with the expression of *“COVID-19 will spread widely in Turkey”*; 43.2% of them (n = 390) **“disagree”** with the expression of *“My risk of getting COVID-19 is higher than others”*; 51.5% of them (n = 465) **“agree”** with the expression of *“I believe I can protect myself better than others against the risk of COVID-19”*; 42.4% of them (n = 382) **“agree”** with the expression of *“I am very worried about the possible risks of this virus to my family and loved ones”*; 50.8% of them (n = 459) **“strongly disagree”** with the expression of *“I think the government is exaggerating this virus risk”*; 33.8% of them (n =

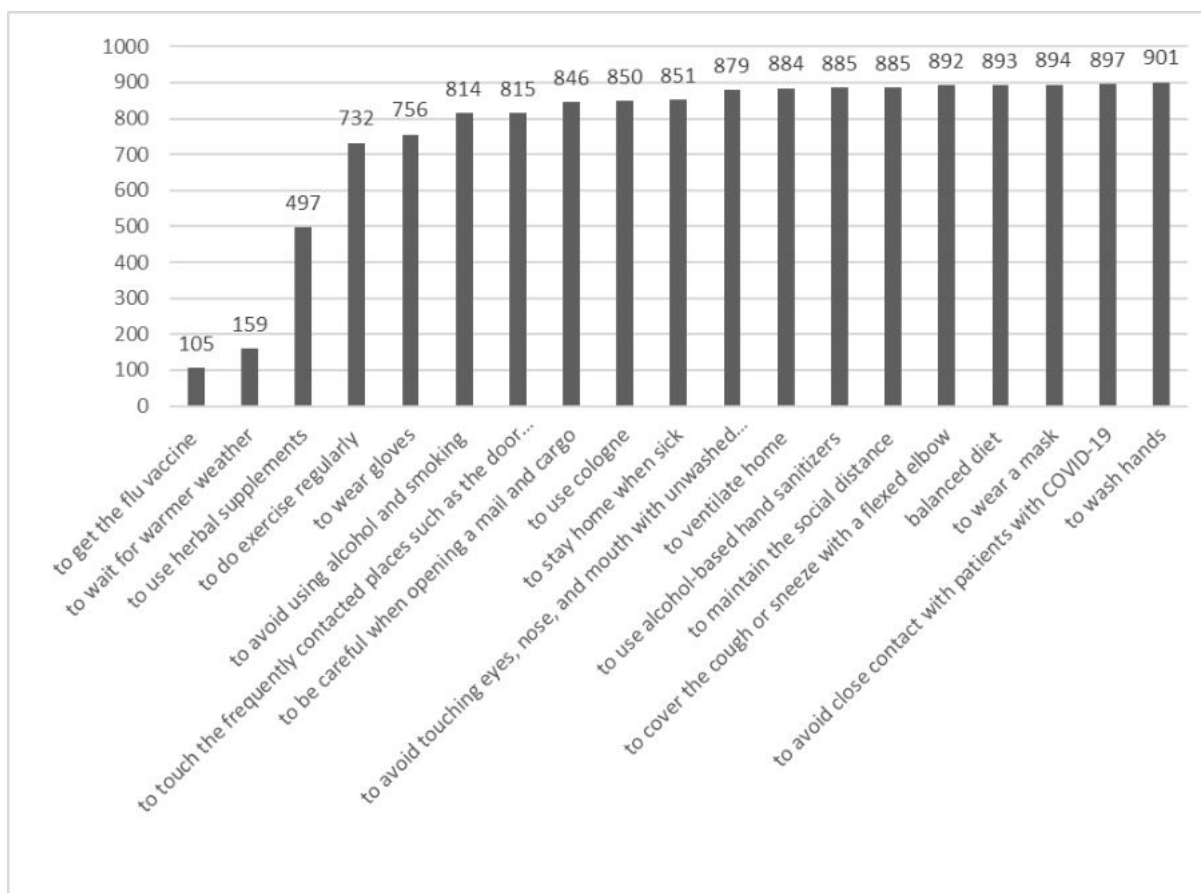


Fig. 1. Precautions against COVID-19.

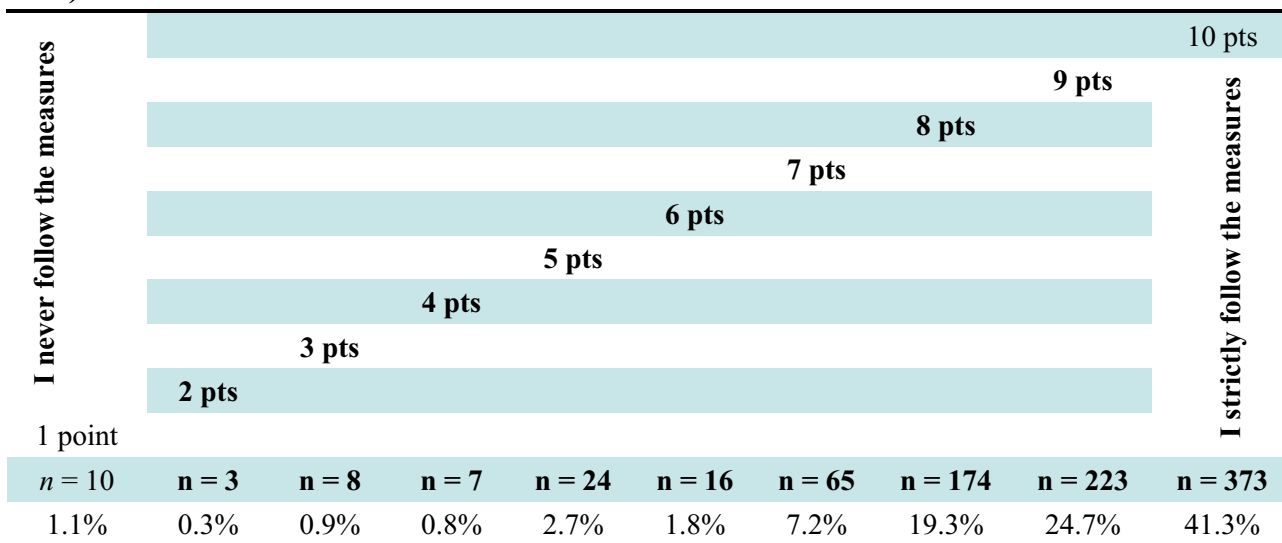
305) **“agree”** with the expression of *“I trust that this crisis will be handled effectively by the health authorities of Turkey”*; and 65.3% of them (n = 90) **“strongly agree”** with the expression of *“Against this pandemic risk, quarantine should be imposed on people coming into Turkey from abroad, especially from China”* (Table 3).

In terms of the assessment to comply with COVID-19 measures, it was seen that 41.3% (n = 373) of the participants gave themselves 10 points, while 24.7% of them gave 9 points (n = 223), 19.3% of them gave 8 points (n = 174), and 7.2% of them gave 7 points (n = 65). It was determined that the mean score of all participants was  $8.7 \pm 1.7$  (Table 4).

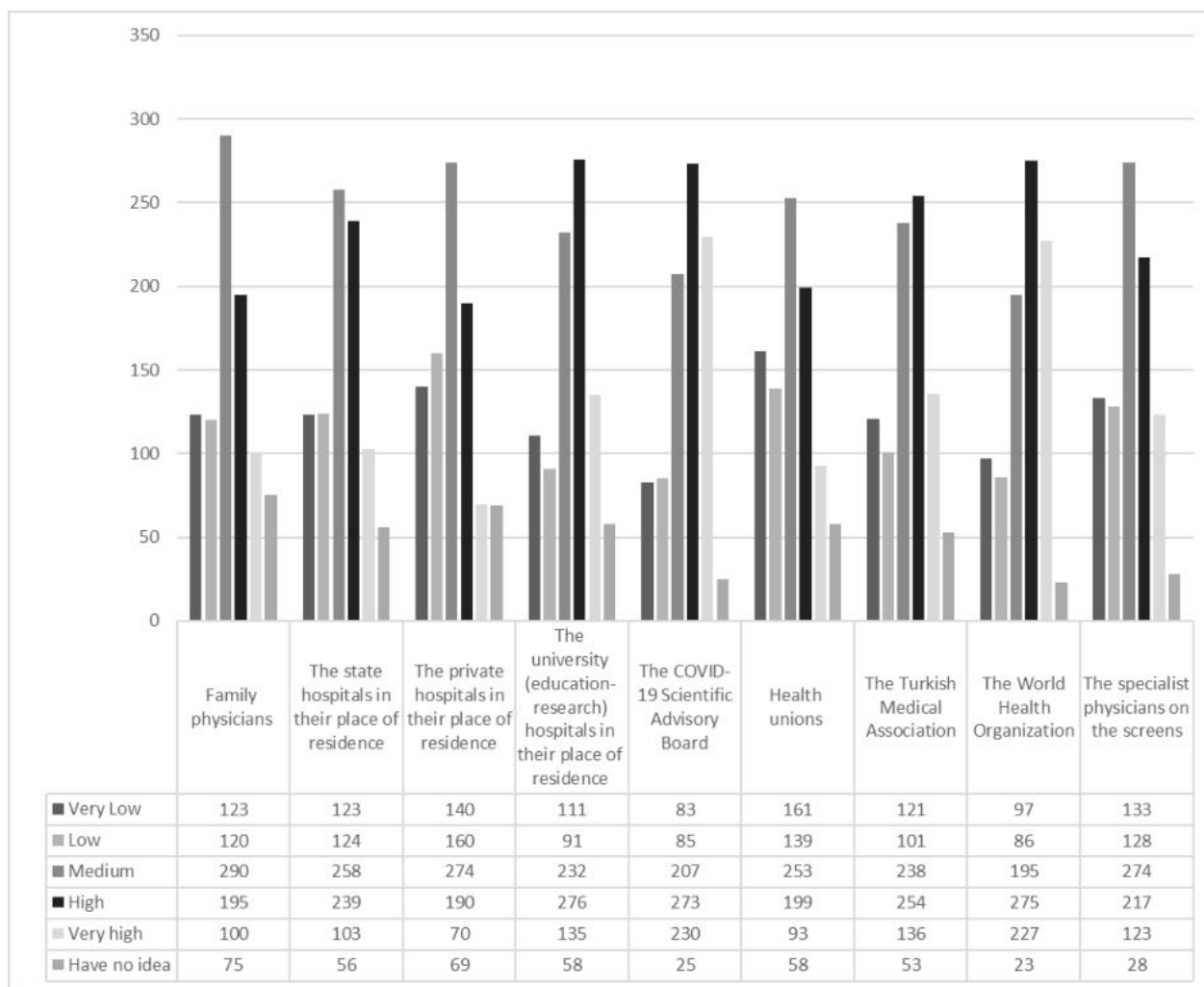
**Table 3. Participants' risk perceptions concerning the COVID-19 pandemic (n = 903)**

Risk perception statements	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree		I do not know	
	n	%	n	%	n	%	n	%	n	%	n	%
If I get COVID-19, my health will be seriously damaged	27	2.9	101	11.2	139	15.4	<b>333</b>	<b>36.9</b>	248	27.5	55	6.1
I think COVID-19 is more serious than influenza in terms of risk	35	3.9	18	2.0	19	2.1	251	27.8	<b>576</b>	<b>63.7</b>	4	0.4
I wouldn't go to the hospital even if I got another disease due to the risk of getting COVID-19	99	10.9	171	18.9	<b>273</b>	<b>30.2</b>	220	24.3	110	12.1	30	3.3
COVID-19 will severely damage my place of resident	17	1.9	88	9.7	199	22.1	<b>357</b>	<b>39.5</b>	176	19.4	66	7.3
COVID-19 will spread widely in Turkey	13	1.5	73	8.1	167	18.5	<b>352</b>	<b>38.9</b>	253	28.0	45	4.9
My risk of getting COVID-19 is higher than others	114	12.6	<b>390</b>	<b>43.2</b>	159	17.6	98	10.8	65	7.2	77	8.5
I believe I can protect myself better than others against the risk of COVID-19	14	1.6	35	3.9	182	20.1	<b>465</b>	<b>51.5</b>	155	17.1	52	5.7
I am very worried about the possible risks of this virus to my family and loved ones	52	5.7	161	17.8	119	13.2	<b>382</b>	<b>42.4</b>	182	20.1	7	0.7
I think the government is exaggerating this virus risk	<b>459</b>	<b>50.8</b>	349	38.6	52	5.7	19	2.1	13	1.5	11	1.2
I trust that this crisis will be handled effectively by the health authorities in Turkey	89	9.8	117	13.0	219	24.2	<b>305</b>	<b>33.8</b>	155	17.1	18	2.0
Against this pandemic risk, quarantine should be imposed on people coming into Turkey from abroad, especially from China.	53	5.8	42	4.7	15	1.7	156	17.2	<b>590</b>	<b>65.3</b>	47	5.2

**Table 4.** Level of compliance (between 1-10) of the participants to COVID-19 measures (n = 903)



Mean: 8.7 ± 1.7



**Fig. 2.** Trust in people and institutions making a statement about COVID-19.

When the participants' level of trust in the people and institutions making a statement about COVID-19 is analyzed, the participants were found to trust in the health unions (32%, n = 253); in the state hospitals in their place of residence (28.6%, n = 258); in the private hospitals in their place of residence (30.3%, n = 274); and in family physicians (32.1%, n = 290) at a **“medium-level”**; while 24% of them (n = 217) trust in the specialist physicians on the screens, 28.1% of them (n = 254) in the Turkish Medical Association (n = 254), 30.2% of them in the Coronavirus Scientific Advisory Board of the Ministry of Health of Turkey (n = 273), 30.4% of them in the WHO (n = 275), and 30.5% of them in the university (education-research) hospitals in their place of residence (n = 276) at a **“high level”** (Fig. 2).

## DISCUSSION

In global crisis situations such as outbreaks, individuals desire to access fast and reliable information to be aware of the state of the world and of the country in which they live. The communication sources preferred by individuals to access information may be influenced by factors such as age, education level, and ability to use communication tools. The literature shows that the media can significantly affect public perception of risk issues. It was also stated that those who did not have any previous health hazard experience or knowledge are more likely to rely on media tools to learn about hazards [10]. Considering the mean age and education levels of the individuals participating in our study, it was an expected situation that printed/visual media and social media were used as a source of access to information. In a study carried out in India, similar to our research, it was found that individuals' sources of access to information in the COVID-19 process were printed/visual (44.19%) and social media (34.88%) [11]. In another study conducted in 2015 in Saudi Arabia to examine the MERS-CoV perceptions of 281 healthcare professionals, it was reported that the most important first source of information was the internet and social media, and the second was TV [12].

The result concerning the fact about 20% of the individuals participating in our study prefer national or international public health institutions such as the

WHO and the Ministry of Health of Turkey as sources of information can be explained by the fact that the information received from these public health institutions are being broadcasted/shared quickly through printed/visual media tools such as TV, newspaper and social media platforms such as Twitter, and Facebook. In recent years, social media has become an increasingly important source of information for risk and crisis communication. Kırık and Özkoçak [13] state that the posts of social media users across the world exceeded 275 million in the period of 21 January-11 March 2020. In addition, the authors underline that the top 10 countries with the most social media posts about COVID-19 are Japan, the United States, South Korea, Britain, France, Brazil, People's Republic of China, Malaysia, Taiwan, and Italy, respectively; and they emphasize the importance of the Turkey taking the eleventh place with more than 6.5 million social media posts. In this context, although social media panic is known to be faster than COVID-19 spread [14], it is possible to address the fact that social media is an important source of information that is frequently used in terms of risk and crisis communication especially in terms of access to information.

It is believed that the fact that almost all of the individuals participating in our study correctly defined the definition of COVID-19 and the route of transmission was associated with the high access to information sources. However, although there is no specific antiviral treatment [15] or vaccine [16] with proven reliability and effectiveness for COVID-19 today, it was observed that the level of knowledge of the participants was not at the desired extent. Yet compared to the literature, the level of knowledge of our participants was higher [11]. On the other hand, in their study conducted with the participation of 240 medical faculty students in Iran, Taghrir *et al.* [17] revealed that about 87% of the participants answered the questions about COVID-19 correctly. Similarly, in another study on healthcare personnel, Elamin *et al.* [12] found this ratio as 87%. Of course, it can be mentioned that the educational levels of the participants and the field they were educated had an effect on attaining these results.

It can be said that this situation about medicines and vaccines is related to news in social media that has not been scientifically proven [18], like “some anti-malarial drugs and pneumonia vaccine prevent



COVID-19". In this regard, it is possible to say that the evidence-based information provided by the media and other official sources and how this information was conveyed will play an important role in emergencies such as outbreaks. Hou *et al.* [19] found that the public responded quickly to government-related announcements about COVID-19 and adopted the recommended behavior according to the directives / guidelines provided. On the other hand, it was found that during the pandemic, informal authorities had put forward misinformation and rumors about some cures and treatments, but as a result of the timely clarification of all these myths by the competent authorities, there was a tendency to decrease in irrational behavior.

In a study conducted in Hong Kong, it was revealed that the most effective method of preventing the COVID-19 outbreak was to increase personal hygiene practices [20]. In our study, we found that the Turkish people have a high level of compliance with the measures proposed by authorities such as Center for Disease Control and Prevention (CDC), WHO, and the Ministry of Health of Turkey to protect against COVID-19, such as washing hands; avoiding contact with a patient with COVID-19; using masks in crowded areas; covering the cough/sneeze with the flexed elbows; maintaining the social distance; using alcohol-based hand sanitizers; and avoiding touching eyes, nose, and mouth with unwashed hands. Besides, they were found to act health-protective and improving behaviors such as balanced nutrition, frequent ventilation of the house, avoiding alcohol-smoking, and regular exercise. This result, on the other hand, is thought to be associated with the high level of printed/visual media and social media usage of the participants in our study and the information advertisements prepared by the Ministry of Health of Turkey. Aker and Mıdık [21], in parallel with our results, reported that 87% of the participants considered hand washing as the most effective measure to be taken against the virus.

In a study carried out in Germany, it was found that the hand washing rate of individuals was lower compared to our study [22]. In a study conducted in Turkey, on the other hand, it was determined that individuals had a high sensitivity to the pandemic and were not unconcerned with the pandemic, that they attach importance to the information provided by media channels and to the implementation of the decisions

taken, and that they take measures such as hand hygiene seriously. Again in the same study, the rate of those who think that COVID-19 will lose its effect with the coming of summer months was 42.9% [23]. In another study, this rate was found to be 20.9% [11]. Warmer summertime air has not yet been proven to be effective in reducing the spread of COVID-19 [18]. The fact that the majority of the participants in our study did not believe in this myth can be interpreted as a positive result.

When the risk perceptions against COVID-19 are analyzed, it was seen that 64.4% of our participants think that if they get COVID-19, their health will be seriously damaged. In a study conducted in Italy, this rate was 57.0% [24]. The reason for this difference can be explained by the fact that the data collection dates of this study were about 50 days before the data collection dates of our study. The total number of cases and deaths in Turkey on the dates of our study was 122392 and 3268 respectively [25], while the total number of cases and deaths in Italy was 10149 and 631 [26] respectively during the dates of the study of Simone and Gnagnarella [24]. In the studies carried out by Taghrir *et al.* [17] in Iran and by McFadden *et al.* [9] in the United States, it was reported that the mean risk perception score of the participants was calculated at a moderate level of 51% and 50%, respectively. Also, in our study, it was observed that 62.5% of the participants had concerns for their families and their loved ones about getting the disease. These results were not similar to the study of Simone and Gnagnarella [24]. In addition, 91.5% of our participants thought that COVID-19 was more serious than influenza. Considering the effects of perceptions concerning the disease on the behavior change of individuals towards disease prevention, it is possible to interpret this result positively, too.

Another point that should be examined within the scope of the study is how much score the participants attributed to them about complying with COVID-19 measures. In this context, it was calculated that the mean score given by all participants in complying with COVID-19 measures was  $8.7 \pm 1.7$ . In other words, the level of compliance of the participants with the relevant measures reflects a high level of 87%. In parallel with our findings, Taghrir *et al.* [17] found this rate as 95%.

The fact that individuals in the community trust in

health authorities and the government in the fight against the pandemic and they follow these suggestions is important for the course of the pandemic. To carry out the pandemic process effectively in Turkey, a scientific advisory board with a total of 38 specialists in their fields such as microbiology, virology, infectious diseases, internal diseases, intensive care, chest diseases, public health, and pediatrics was established within the Ministry of Health of Turkey on January 10, 2020. This board is effective both in fighting against the pandemic and in informing the society with the most accurate and up-to-date information in printed/visual and social media. Based on the results obtained from our study, the rate of trust in the Coronavirus Scientific Advisory Board of the Ministry of Health of Turkey and the WHO was quite similar (~%55.0). McFadden *et al.* [9] reported that the institution they trusted in the first place was the Director of CDC and the second was the Director of the National Institutes of Health. In addition, half of our participants think that this crisis will be handled effectively by the health authorities in Turkey, while the vast majority of them (89.4%) think that the government is “not exaggerating” this virus risk. In a study conducted in Germany, on the other hand, the trust rate for health authorities was 71.0%, while the trust rate for government/politicians was 54.5% [22].

In our study, we found that the trust rate for private hospitals was quite low compared to state hospitals and university (education-research) hospitals. The reason for this is thought to be related to the fact that hospitals that have at least two specialist physicians in infectious diseases and clinical microbiology, chest diseases, internal diseases, and that hospitals with adult intensive care beds on level three were declared as Pandemic Hospital by the Scientific Advisory Board, moreover to the fact that state hospitals and university (education-research) hospitals have been converted to Pandemic Hospital in general. On the other hand, it can be stated that the fact that private hospitals are rather considered as health enterprises in the eyes of society has the potential to affect this situation.

## CONCLUSION

The COVID-19 pandemic still continues with its

globally unknown effects. Like all over the world, health authorities also in Turkey have taken several measures in the context of fighting against the pandemic and they expect society to comply with these measures. Risk perception is an important component of creating behavior change. To increase the risk perception of society in a way that will not cause concern and to encourage individuals to engage in health-protecting behaviors are the primary duties of governments and health authorities. Factors such as sharing up-to-date and accurate information with the society in all kinds of media tools in such crises and increasing the level of trust/compliance of individuals to health authorities will have an impact on minimizing irreversible conditions. The fact that individuals in the society fulfill their individual responsibilities by confirming the accuracy of the information took place in printed/visual and social media from reliable sources is an important factor in reducing the effects of infectious diseases.

## Authors' Contribution

Study Conception: HH, ZA, DGH; Study Design: HH, ZA, DGH; Supervision: HH, ZA, DGH; Funding: HH, ZA, DGH; Materials: HH, ZA, DGH; Data Collection and/or Processing: HH, ZA, DGH; Statistical Analysis and/or Data Interpretation: HH, ZA, DGH; Literature Review: HH, ZA, DGH; Manuscript Preparation: HH, ZA, DGH and Critical Review: HH, ZA, DGH.

## Conflict of interest

The authors disclosed no conflict of interest during the preparation or publication of this manuscript.

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