

## People' responsibilities and adaptation in the struggle against the COVID-19 pandemic

Responsibilities and adaptation in COVID-19 pandemic

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### Abstract

**Aim:** In this study, it was aimed to determine the individual responsibilities that the public should fulfill in the struggle against the COVID-19 pandemic and develop a scale in this regard; to identify the extent to which Turkish society complies with this responsibility.

**Material and Methods:** First, the briefings of the members of the COVID-19 Science Board, formed by the Ministry of Health of the Republic of Turkey were scanned on the web, and a 'COVID-19 Individual Responsibilities Scale' comprising 45 statements was established, which includes personal precautions. As a result, 6,770 surveys were taken into consideration. The appropriate number of people was reached from seven regions of Turkey, most of them from the Central Anatolia region (n=3,068).

**Results:** As a result of the analyses, 13 statements were removed from the scale, and the remaining 32 phrases were collected under seven factors. Of the seven dimensions identified, the most acceptable to the public is the use of mask. This one is followed by application to health institutions and hand hygiene. The least adaptable dimensions of the people are healthy lifestyle and home hygiene.

**Discussion:** Perhaps the most effective weapon against the spread of the virus, the physical distance protection dimension, was ranked fifth. The study findings reveal that the 'COVID-19 Individual Responsibilities Scale' can be used for similar studies.

### Keywords

COVID-19; Pandemic; Responsibilities; Adaptation

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## Introduction

During a pandemic, the necessary precautions should be taken in a timely way to reduce the rate of cases in the community and the maximum number of cases, prevent excessive agglomerate in hospitals, and keep the total case number and its effects on health to a minimum level [1]. Regarding the precautions to be taken in the struggle against COVID-19, persons and organizations, especially the advisory organizations (such as WHO), states, and the public, have essential responsibilities. To this end, WHO has identified COVID-19 representatives to advise countries on February 21; Most of the meetings were held by Italy (February 24), China (February 25), and Iran (March 2) [2]. Some states have put in place implementations such as the emergency declaration, determination of pandemic hospitals, construction of new hospitals, improving the diagnostic requirements of health institutions, increasing the number of tests, determination of appropriate medical treatment, particular treatment practices, remote access to health professionals, monitoring the pandemic process, Q.R. code, 'stay at home' policies, increasing physical distances, banning mass meetings, closing educational institutions, and public spaces, e-learning in education, closure of religious facilities, closure of businesses, cinema, restaurants and bars, work/telework from home, postponement of sporting events, restriction of flights, curfews, city quarantines, strict control of entry into the country (available at: <https://www.ecdc.europa.eu/en/current-risk-assessment-novel-coronavirus-situation>) [2-6].

One of the primary conditions for the fight against the pandemic is that the public is aware of individual responsibilities and adapts to these responsibilities. The fact that states put into operation various practices that are counted above and require high budgets, guiding the public, does not mean that the fight against the pandemic will be entirely successful. Moreover, a significant part of government precautions is not permanent, and if implemented for a long time, will inevitably lead to economic, social, and psychological consequences.

Regarding the responsibilities that ordinary people should take in the fight against COVID-19 pandemic, individuals and organizations such as various organizations, government officials, scientists, and individuals and organizations make statements and publish guides. The World Health Organization recommends regular washing of hands with soap and water, using an alcohol-based hand sanitizer when it is not possible to reach soap and water, avoiding going to crowded places, being at least one meter away from people, and wearing masks on the way out, staying at home until you recover, avoiding touching the eyes, nose, and mouth, closing your mouth and nose with twisted elbows or handkerchiefs when you cough/sneeze (available at: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public>). The stated recommendations were implemented and found to be useful in countries such as China and South Korea. For this reason, it is frequently applied in other countries around the world [7].

Individual responsibilities to be fulfilled by the public should be determined by authorized persons and institutions and disclosed to the people with a scientific perspective. Afterward, measuring the compliance of people is essential to develop

new policies. Accordingly, the current study was carried out to determine the individual responsibilities in the fight against the COVID-19 pandemic and determine the extent to which Turkey's people edict.

## Material and Methods

A two-stage data collection method was used to accomplish the purpose of the study. The first stage aims to identify the individual responsibilities that people must fulfill in the fight against the COVID-19 pandemic and develop a scale in this regard. For this purpose, since the beginning of the COVID-19 pandemic, information about the pandemic of the Ministry of Health of the Republic of Turkey and the Science Board of the Ministry of Health was scanned web via the Google search and subjected to content analysis. As a result of the analysis, the 'COVID-19 Individual Responsibilities Scale' consisting of 45 items was established. The second phase aims to determine the extent to which the people of Turkey are obeyed the individual responsibilities specified.

The survey was conducted between 20.05.2020-30.06.2020, and it was targeted to provide participation in the study from all regions of Turkey. As a result of the study, 6,932 people were surveyed. Before starting the data analysis, it was checked whether there was incorrect data in the prepared dataset, and the incorrectly entered data were corrected. The dataset was subsequently controlled for missing data. At the same time, the dataset was checked for an outlier. These forms were removed from the dataset because outlier was detected in the data of 162 participants. For this reason, 6,770 surveys were analyzed.

## Results

6,770 surveys were received, including 6,932 people from all seven regions of Turkey and 3,068 people from the Central Anatolia region, 966 from the Mediterranean Region, 914 from the Marmara Region, 717 from the Aegean Region, 475 from the Black Sea Region, 339 from the Eastern Anatolia region, and 291 from the Southeast Anatolia region (Figure 1).

About a third of respondents (32.4%) were between the ages of 21 and 25. The largest number of participants (n= 2,191) was in this age group. The proportion of male participants (59.2%) was higher than that of female participants (40.8%). The proportion of unmarried participants (64.6%) was close to twice the proportion of married people (35.4%).

For testing the validity of COVID-19 Individual Responsibilities Scale, exploratory factor analysis was applied to the data on 45 statements on the scale. The main factors related to the targeting were tried to be identified. In this process, basic components were analyzed, and factor loads were examined. If each item's factor load value on the scale was more significant than 0.3, it was considered moderate. If it was more significant than 0.6, it was rated high [8]. The 13 statements with the item load below 0.35 were removed from the scale, and the remaining 32 statements and analyses were repeated. According to the analysis, the scale's KMO value was greater than 0.50, and the data were suitable for factor analysis [9]. The calculated KMO value was 0.930, which can be considered excellent. At the same time, since  $p=0.000<0.05$ , the Bartlett test result was significant.

The scatter diagram is a test used to find the number of factors in scale [10]. As a result of the analysis, it was determined that the scale plateaued after the seventh point, according to eigenvalue values, and the cutting point was defined as seven (Figure 2).

Principal Axis Factoring was applied as an extraction method, and the Equamax with Kaiser Normalization was used, which is one of the orthogonal ways as a rotation method. This method is a mix of the Varimax and Quartimax methods [10]. Dimensions were based on the total scores.

The items that constitute the factors and factor load values of the items are shown below:

**Factor 1**

1. When I come home from the outside, if my clothes cannot be washed, I air them on the balcony (.695).
2. When I bring home what I bought from outside, I leave it behind the door/on the balcony for 2-2.5 hours (.630).
3. I am cleaning my phone when I get home from the outside (.622).
4. When I come home from the outside, I wash my washable clothes (.598).
5. I wash and dry the packaged goods I buy at the grocery store with soap and water if possible and put them back. (.578).
6. When I come home from the outside, I change my clothes (.481).
7. We clean surfaces that we frequently use at home, such as door handles, fixtures, sinks, every day (.368).

**Factor 2**

8. I am not hugging anyone anymore (.825).
9. I do not get hands-on with anyone anymore (.786).
10. I do not kiss the elders' hand anymore (.651).
11. We do not accept guests at home, and I do not go to the guest house (.385).

**Factor 3**

12. I wear a mask when I shop (.732).
13. If I am going to a health care institution, I wear a mask (.699).
14. I wear a mask when I get on public transport (.628).
15. I wear a mask when I go out (.511).
16. My mask is special to me; I do not share it with others (.411).

**Factor 4**

17. I wash my hands often (.648).
18. I wash my hands with soap and water (.630).
19. I wash my hands for at least twenty seconds (.559).
20. I provide hand hygiene when I touch mobile phones, computer keys, elevator keys, etc. (.392).
21. I use hand sanitizer when there is no soap or water (.385).
22. I do not come into contact with my mouth, nose, eyes, etc. without washing my hands (.377).

**Factor 5**

23. When I go outside, I keep at least three steps distance from people (.523).
24. I keep a social distance (2 meters) when shopping (.488).
25. I am not in crowded environments (.457).
26. I kindly warn people who do not follow the advice around me (.377).

**Factor 6**

27. I go on a balanced diet (.749).
28. I sleep regularly (.667).
29. I sport regularly (.538).
30. I consume plenty of fluids (.481).

**Factor 7**

31. I try to avoid going to family health centers as much as possible (.754).
32. I try to avoid going to hospitals as much as possible (.742).

As a result of the analysis, 13 items were removed from the scale, and the remaining 32 statements were collected under seven factors. The first factor is 'home hygiene' (1-7); the second is 'communication routines' (8-11), the third is 'use of mask' (12-16), the fourth is 'hand hygiene' (17-22), the fifth is 'physical distance' (23-26), the sixth 'healthy lifestyle' (27-30), and the seventh is called 'application to health care organizations' (31-32).

As a result of the exploratory factor analysis, confirmatory factor analysis (CFA) was applied to the dimensions obtained. The values generally considered in the CFA are  $\chi^2 / df$ , GFI, CFI, and RMSEA. The path diagram provides a schematic version of the model. In the study, the relationship between the variables

**Table 1.** Estimates of Goodness-of-Fit Index for Model

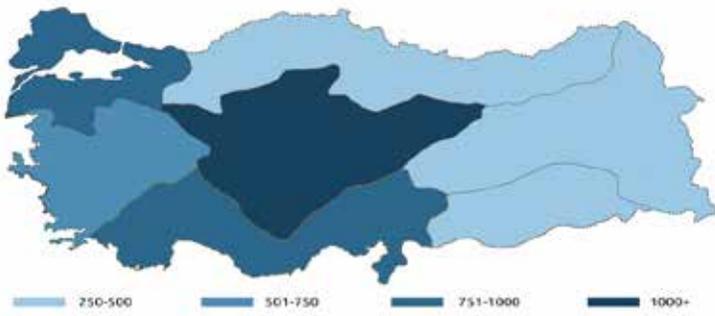
The Criterion of Model Fit	Good	Acceptable	Fit in the Study	Fit
$\chi^2 / df$	$\chi^2 / df \leq 2$	$\chi^2 / sd \leq 3$	1.27	Good
RMSEA	$RMSEA \leq .05$	$RMSEA \leq .08$	.05	Good
NFI	$.95 \leq NFI$	$.90 \leq NFI$	.96	Good
CFI	$.97 \leq CFI$	$.95 \leq CFI$	.96	Acceptable
SRMR	$0 < SRMR \leq .05$	$0 < SRMR \leq .10$	.049	Good
GFI	$.95 \leq GFI$	$.90 \leq GFI$	.93	Acceptable
AGFI	$.90 \leq AGFI$	$.85 \leq AGFI$	.91	Good

Resource: Schermelleh-Engel et al., 2003

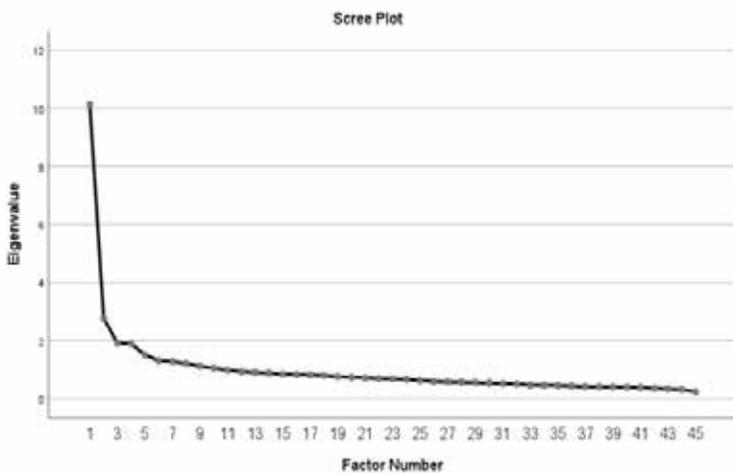
**Table 2.** Descriptive Statistics for Reliability, Normality Test and Scale Subdimensions

Dimensions	Cronbach $\alpha$	Normality* p	Min	Max	$\bar{x} \pm sd$	1	2	3	4	5	6
1. Home hygiene	.795	.000	7.00	35.00	27.38±5.79	-					
2. Communication routines	.774		4.00	20.00	18.09±2.59	.359**	-				
3. Use of mask	.759		5.00	25.00	24.44±1.59	.316**	.321**	-			
4. Hand hygiene	.773		6.00	30.00	27.60±2.99	.578**	.380**	.365**	-		
5. Physical distance	.670		4.00	20.00	16.91±2.58	.509**	.397**	.326**	.520**	-	
6. Healthy lifestyle	.708		4.00	20.00	14.66±3.14	.291**	.173**	.110**	.312**	.282**	-
7. Application to health organizations	.732		2.00	10.00	9.23±1.46	.122**	.159**	.188**	.196**	.228**	.069**

\*Shapiro-Wilk  $\bar{x}$ = mean sd= standard deviation p= significance value \*\* significant at the 0.01 level (2-tailed)



**Figure 1.** Distribution of participants by region



**Figure 2.** Scatter Diagram

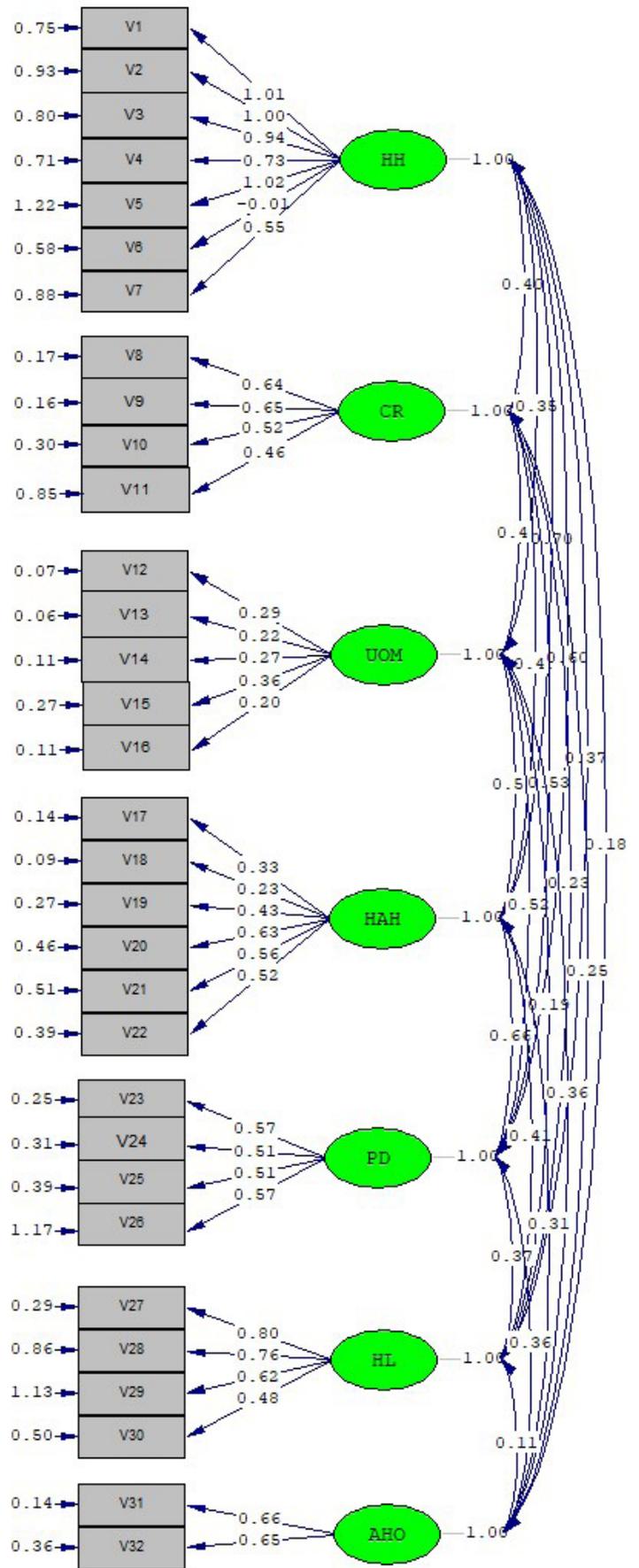
(dimensions) examined was made schematically, assuming that it is compatible [11].

Looking at the general fit index ( $\chi^2 / sd$ ) of the model (Table 1), which is 1.27, and the RMSEA index, which is 0.05, it can be said that it is a good fit. The NFI value (.96) can be said to be a good fit. The CFI value (.96) can be said that it is acceptable. As the SRMR value approaches zero (to 0), it is assumed that the model's fit increases. In the study, it can be said that the scale has a good fit with a 0.049 fit index value. In light of the above information, it can be said that the fit indexes of the scale used in the study are good and acceptable. The GFI fit index value (.93) appears to be acceptable. The AGFI fit index (.93) seems to be a good fit [12].

Table 2 provides descriptive statistics for reliability, normality test, and scale sub-dimensions. Cronbach alpha ( $\alpha$ ) coefficient of the scale size was found to be 0.884. In the sub-dimensions, the highest reliability coefficient is home hygiene ( $\alpha = .795$ ), and the lowest is physical distance ( $\alpha = .670$ ).

Shapiro-Wilk test results were examined to determine the test techniques to be used in the analyses, and non-parametric test techniques were used because the distribution did not show normal distribution ( $p < .05$ ).

Among dimensions, the one with the highest average is use of mask ( $\bar{x} \max = 25$ ;  $\bar{x} = 24.44 = 98\%$ ), and the one with the lowest is healthy lifestyle ( $\bar{x} \max = 20$ ;  $\bar{x} = 14.66 = 73\%$ ). These results show that individuals give more weight to use of mask within the framework of their responsibilities.



Chi-Square=8496.15, df=6699, P-value=0.00000, RMSEA=0.052

**Figure 3.** Path Diagram

When looking at correlation analysis results, positive, statistically significant relationships were found between all dimensions ( $p < .01$ ). When looking at the relationship analysis between sub-dimensions, the highest relationship was between home hygiene and hand hygiene ( $r = .578$ ). The second highest relationship was between hand hygiene and physical distance ( $r = .520$ ).

## Discussion

This study was carried out to determine the individual responsibilities that people must fulfill in the fight against the COVID-19 pandemic and develop a scale in this regard, and determine the extent to which the people of Turkey edict these responsibilities. Among the seven dimensions determined as a result of this study, the most adapted dimension to the public is use of mask. The application to health organizations follows this with statements about not going to health organizations during the pandemic process and the hand hygiene dimension containing substances that prevent the virus from being infected through hands. The least adaptable dimensions of the public are healthy lifestyle and home hygiene.

When the literature was examined, there was no study of the scale development of individual responsibilities in the fight against the COVID-19 pandemic. There are a limited number of studies regarding the harmony of the people. One of these studies was carried out in China with 4,826 people. As a result, participants were found to largely follow the rules issued by the Chinese Government (such as avoiding travel to areas affected by the COVID-19 pandemic, wearing the mask, changing the mask regularly, and washing hands regularly) [4]. On the other hand, in another study conducted to clarify the situation of applying personal protective measures (hand hygiene, social distancing measures, avoiding touching eyes, nose and mouth, respiratory etiquette, self-isolation) by the Japanese people during the COVID-19 pandemic process and including 2,400 people, it was found that personal protective precautions were applied insufficiently and therefore public awareness activities were needed [13].

Public awareness of personal protective measures will reduce the spread of the COVID-19 pandemic and provide significant advantages in combating diseases such as tuberculosis, influenza, and community-acquired pneumonia [7]. It should also be noted that the use of personal protective precautions in combination with connected methods, such as antiviral prototype, vaccination, and appropriate treatment, will produce more effective results [14-16].

### Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

### Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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### Conflict of interest

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