

# Anxiety, stress and psychological resilience among the general population in Turkey during the COVID-19 pandemic

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## Summary

**Background:** The COVID-19 pandemic has produced a global public health crisis unprecedented in a century. The aim of this study was to analyze the stress, anxiety and psychological resilience levels perceived by the Turkish society during the COVID-19 process and the variables that predict them in a multi-dimensional way.

**Subject and methods:** Between April 17th and April 30th 2020, a snowball sample of 888 Turkish people adults 18 years and older by online survey company Qualtrics. Participants completed a structured questionnaire (28 questions), the Turkish version of The Brief Resilience Scale (BRS), Perceived Stress Scale (PSS) and State-Trait Anxiety Inventory (STAI).

**Results:** The level of stress perceived by the Turkish people is high, the level of anxiety is moderate, and their psychological resilience is high. As the stress level of the people increases, their psychological resilience and anxiety levels decrease. The variables that increase the stress level of the public and decrease psychological resilience; are decreasing age, seeing government measures as inadequate, having to go out, not working, and quarantining someone around with suspicion or diagnosis of COVID-19. The variables that increased the state anxiety level of the public were working as an employer, not being employed, decreasing income, and evaluating the measures taken by the government as inadequate.

**Conclusions:** A transparent and informative attitude should be followed by the authorities in order to reduce the level of stress and anxiety perceived by the public and to increase psychological resilience. Sustainable strategies, policies and practices should continue to ensure maintaining the positive support of society to combat the pandemic.

**Keywords:** COVID-19 pandemic - Turkish society - stress - anxiety - psychological resilience

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## INTRODUCTION

The coronavirus (COVID-19), which started in Wuhan, China in December 2019, has been a great threat to global public health. When the World Health Organization (WHO) declared a pandemic (on 11 March 2020), cases of the virus had also started to appear in Turkey. When this study was conducted the number of cases was increasing in Turkey (Turkish Republic of Health, 2020), as well as all over the world (World Health Organization, 2021). According to last records, there were nearly 17,232,066 confirmed cases of COVID-19 and 102,174 deaths in Turkey (Turkish Republic of Health, 2023).

When cases of the virus began to be seen frequently, as in many other countries, the Turkish government placed restrictions on people's personal lives in several ways. These were imposing lockdowns for certain age groups (<20 and >65), closing schools across the country, imposing travel restrictions on the metropolitan cities (30 metropolitan municipalities), imposing lockdowns on weekends and public holidays and giving 'stay at-home'

orders to the general public. This essentially means that millions of people have entered a voluntary or mandatory quarantine process to be protected from the virus.

Studies examining the psychological effects of the COVID-19 outbreak have reported adverse psychological effects, including fear of longer quarantine periods, fear of infection, frustration, boredom, insufficient provisions, inadequate information, financial loss and post-traumatic stress symptoms associated with stigma (Brooks et al., 2020; Wang et al., 2021; Yuan et al., 2023). The over-abundance and rapid spread of information of all kinds, including rumours, unreliable information, misinformation, disinformation, fake news, conspiracy theories and related blame games and scapegoating has detrimentally influenced public mental health (Jakovljevic et al., 2020; Hu et al., 2023). The news regarding separation from loved ones, loss of liberty, new cases and deaths, uncertainty about how long the pandemic will continue and boredom significantly affected individuals (Moreno et al., 2020). Moreover, the increasing concern and fear around the world about the financial and employment-related

implications of the pandemic (Moreno et al., 2020; Knipe et al., 2020; Yuan et al., 2023) have negatively affected the mental health of individuals. Li et al. (2020) showed that the fears people experienced around income, employment or being able to pay existing debts led to a significant increase in anxiety levels. Time has shown that the effects of this virus are not only psychological but also economic, social and cultural implications (Phiri et al., 2021).

With the rapid spread of the pandemic, studies examining its effects on the mental health of the general population in different countries had been increased day by day (González Sanguino et al., 2020; Huang et al., 2020; Lee, 2020; Nelson et al., 2020; Pancani et al., 2020; Wang et al., 2021). Studies in the early stage of COVID-19 have mostly focused on the effect of the virus on risk factors associated with the mental health of the general public, such as anxiety, stress and depression. However, there were limited studies showing its effect on mental health factors such as psychological resilience (Cleland, 2020; Wheitzel et al., 2021). In order to combat the negative effects of the virus on mental health, it is important to understand psychological resilience (Kavi & Karakale, 2018), which includes important coping and adaptation skills, and how they are affected by this process. However, at the time the study was conducted there were limited studies examining the effects of COVID-19 on the mental health of Turkish society. Based on the assumption that people's reactions will change in different cultural contexts, it is important to conduct studies in many different societies. This study, therefore, aimed to analyse the stress, anxiety and psychological resilience levels among the general population in Turkey during the early stage of the COVID-19 pandemic and the variables that predict them, in a multi-dimensional way.

## SUBJECTS AND METHODS

### Study Design, Setting, and Participants

We adopted a cross-sectional survey design to assess the public's psychological response. A snowball sampling strategy was used. As the Turkish Government recommended that the public minimise face-to-face interaction and isolate themselves at home, potential respondents were electronically invited by existing study respondents. Participants (n=888) were recruited by the survey company Qualtrics (Qualtrics Survey Software, Provo, UT, USA) from an online survey platform. The online survey

was first distributed to the researchers' immediate close circle and university students, and they were then encouraged to forward it to others. The inclusion criterion was that respondents must be at least 18 years old.

Data collection began on 17 April 2020, in order to find out the early effects of COVID-19, 38 days after the first confirmed COVID-19 case in Turkey, and was completed on 30 April 2020. All participants gave informed consent before completing the questionnaire. Overall, a convenience sample of 1234 respondents accessed the online study. However, 83 participants opened the link and gave their consent but did not complete any questions, reducing the sample size to 951. Among these participants, 63 did not complete one or more scale measures for variables (i.e. state anxiety inventory), further reducing the sample to 888 individuals.

Participants were recruited from large cities (71.4%, n=634), medium-sized cities (18.7%, n=166) and rural areas (9.9%, n=88). The mean age of the sample was 36.15 years (SD=12.20, range 18–71). Regarding the highest level of educational achievement, 79.6% (n=79.6) had completed an undergraduate degree and above, 3.8% (n=34) had completed primary school, and 16.6% (n=147) had completed secondary education. More than half of the respondents were employed (58.7%, n=521), and 41.3% (n=367) were currently unemployed. Few of the participants (7.3%, n=9) had to permanently close their workplaces, but 25.8% (n=32) had to temporarily close their workplaces during the pandemic. The mean average income of the participants was 8729.6 Turkish Lira. Half of the respondents were single (50.5%, n=448), and half were married (49.5, n=440). The majority of participants lived with their families (88.2%, n=783), 9.6% lived alone, and 2.3% (n=20) lived with a friend.

### Measures

The structured questionnaire was developed by examining previous surveys on the psychological impacts of COVID-19 and influenza outbreaks (González Sanguino et al., 2020; Wang et al., 2020). The structured questionnaire consisted of 28 questions covering several areas (sociodemographic data, contact history with COVID-19 cases, measures against COVID-19, knowledge and concerns about COVID-19 etc.).

Resilience was measured using the Turkish version (Akin et al., 2014) of the Brief Resilience Scale (BRS). The BRS consists of six items scored on a five-point Likert scale (1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree). Items 1, 3 and 5 are positively phrased, and items 2, 4 and 6 are negatively

phrased. To evaluate the questionnaire, the scoring of the negatively phrased items is reversed in order to calculate the mean of the six items. The scores range from six to 30 points, with higher values indicating higher resilience (Akin et al., 2014). In the present study, the BRS had an acceptable Cronbach's alpha (0.75).

Perceived stress was measured using the Turkish version (Eskin et al., 2013) of the Perceived Stress Scale (PSS) with 14 items. The questions in the PSS ask about participants' abilities to overcome stressful events during the last month. In each case, respondents are asked how often they felt a certain way. Participants evaluate each item on a five-point scale from 'never' (0) to 'very often' (4). PSS scores are obtained by reversing the responses (e.g. 0=4, 1=3, 2=2, 3=1 and 4=0) for the seven positively stated items (items 4, 5, 6, 7, 9, 10 and 13) and then calculating the total of all the items in the scale. The range of the scale is 0–56. Higher scores indicate a greater perception of stress (Eskin et al., 2013). In the present study, the PSS had an acceptable Cronbach's alpha (0.81).

State anxiety was measured using the Turkish version (Öner & LeCompte, 1985) of the A-State scale of the State-Trait Anxiety Inventory (STAI) with 20 items. Participants evaluate each item on a four-point scale from 'almost never' (1) to 'almost always' (4). A-State scales have ten reversed statements (items 1, 2, 5, 8, 10, 11, 15, 16, 19 and 20). Possible scores range from 20 to 80, with higher scores indicative of higher levels of state anxiety. The reliability of the A-State scale in the current sample was high ( $\alpha=.944$ ) (Öner & LeCompte, 1985). In the present study, the STAI had an acceptable Cronbach's alpha (0.85).

## Statistical Analysis

All tests were two-tailed, with a significance level of  $p<0.05$ . Statistical analysis was performed using SPSS Statistic 25.0 (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp). Normality assumption was examined with the Shapiro–Wilk test. When the differences between two groups needed to be evaluated, the Student's t-test was used when the prerequisites of the parametric tests were met. If they were not met, the Mann–Whitney U test was applied. Regarding the comparisons of three or more groups, the one-way analysis of variance and the Turkey HSD tests were used if one of the multiple comparison tests was used. If this was not provided, the Kruskal–Wallis and Bonferroni–Dunn tests were used. The relationship between two continuous variables was evaluated with the Pearson's correlation coefficient or with the Spearman correlation coefficient

if the prerequisites of the parametric tests could not be met. Multivariate analysis (MANOVA) analysis was conducted to examine the effects of independent variables on more than one dependent variable and how they changed together. The parametric test prerequisites for the MANOVA test were examined (Box's M test and multivariate normal distribution), and it was determined that it met the necessary prerequisites. Accordingly, a comment was made regarding whether or not the Wilks' Lambda statistics in the multivariate tests table were significant.

In this study, C4.5 (J48), Decision Stump, Hoeffding Tree, LMT, Random Forest, Random Tree and RepTree algorithms in the WEKA tool were used to perform a comparative analysis of decision tree algorithms, in order to show which variable mostly predicted the mean scores obtained from all three scales. In experimental studies, the original dataset was randomly divided into ten equal parts using the ten-fold cross-validation method. One of these parts was then kept as validation data to test the model, while the remaining nine parts were used as a training dataset. The cross-validation process was carried out ten times, allowing each of the ten parts to be used as validation data once. Within the scope of this study, no feature selection method was applied to the features in the dataset to obtain comparative results from decision tree algorithms. All features were taken into account in the creation of the classification model. The dataset did not contain any missing values, so it was not subjected to any pre-processing methods. In this study, it was evaluated with the Chi-squared Automatic Interaction Detector algorithm.

## RESULTS

In this study, it was found that there was no significant difference between the mean scores of the BRS, PSS and STAI and the variables. These were where the respondents lived (78% lived in metropolitan areas), their professions (27% were teachers), whether they had a chronic illness (79.5% did not) and whether they had psychosocial support resources (72% did) ( $p>0.05$ ). However, it was found that the respondents who were employers (8.8%, mean 42.6) had a significantly higher mean STAI score than the respondents who were employees ( $p<0.05$ ).

The results in Table 1 show that as the age of participants increased, their psychological resilience increased, and their stress levels decreased ( $p<0.05$ ). State-trait anxiety levels increased as the income of the participants rose ( $p<0.05$ ). As the psychological resilience of individuals increased, the perceived stress level decreased ( $p<0.01$ ),

**Table 1.** Association between socio-demographic conditions and psychological resilience, perceived stress and state anxiety (n=888) and relationship between continuous variables

	n (%)	BRS		PSS		STAI	
		Mean (SD)	p-value	Mean (SD)	p-value	Mean(SD)	p-value
<b>Living place</b>							
Metropolitan	634 (71.4)	19.0 (4.4)		42.7 (6.8)		40.9 (5.1)	
Urban	166 (18.7)	19.1 (4.2)	0.935 <sup>II</sup>	42.5 (6.3)	0.960 <sup>II</sup>	40.9 (4.7)	0.795 <sup>II</sup>
Rural	88 (9.9)	18.9 (3.9)		42.8 (7.6)		41.3 (4.7)	
<b>Job</b>							
Educator	143 (27.4)	19.3 (4.0)		41.6 (6.2)		40.6 (4.9)	
Healthcare-workers	127 (24.4)	19.3 (4.1)		42.0 (5.5)		40.3 (4.8)	
Technician	69 (13.2)	19.7 (4.7)	0.785 <sup>II</sup>	40.5 (6.3)	0.197 <sup>II</sup>	41.1 (4.6)	0.477 <sup>II</sup>
Service	42 (8.1)	19.3 (4.2)		43.3 (7.1)		41.5 (5.7)	
Other	140 (26.9)	19.9 (4.0)		42.0 (5.9)		41.2 (5.4)	
<b>Professional position</b>							
Employer	47 (8.8)	20.0 (5.1)	0.521 <sup>€</sup>	42.3 (8.0)	0.631 <sup>€</sup>	42.6 (5.8)	0.014 <sup>*€</sup>
Employee	488 (91.2)	19.5 (4.0)		41.8 (5.9)		40.7 (4.9)	
<b>Chronic disease</b>							
Yes	182 (20.5)	18.7 (4.1)		42.4 (6.5)		41.1 (4.9)	
No	706 (79.5)	19.11 (4.4)	0.317 <sup>€</sup>	42.7 (6.9)	0.609 <sup>€</sup>	40.9 (4.9)	0.526 <sup>€</sup>
<b>Psychosocial support resource</b>							
Yes	643 (72.4)	19.1 (4.3)	0.191 <sup>€</sup>	42.6 (6.7)	0.421 <sup>€</sup>	40.8 (5.1)	0.357 <sup>€</sup>
No	245 (27.6)	18.7 (4.6)		43.0 (6.9)		41.2 (4.4)	
	<b>Min-Max</b>		<b>p-value<sup>¥</sup></b>		<b>p-value<sup>¥</sup></b>		<b>p-value<sup>¥</sup></b>
Age	18-71	36.1 (12.2)	0.206 <sup>**</sup>		-0.323 <sup>**</sup>		0.048
Income	1000-2000	8729.67-11799.42	0.022		-0.043		0.078 <sup>*</sup>
BRS	7-30	19 (4.4)	-		-0.580 <sup>**</sup>		0.084 <sup>*</sup>
PSS	18-63	42.7 (6.8)	-0.580 <sup>**</sup>		-		-0.121 <sup>**</sup>
STAI	20-68	40.9 (4.9)	0.084 <sup>*</sup>		-0.121 <sup>**</sup>		-

\*:p<0.05 ; \*\*: p<0.01; II One Way ANOVA; € Student's t test; ¥: Spearman

and the state-trait anxiety level increased (p<0.05). In addition, as the stress perceived by the participants increased, their state-trait anxiety levels decreased (p<0.01).

It was found that there was no significant difference between the mean scores of the BRS, PSS and STAI and the following variables: the participants' level of knowledge about the COVID-19 virus (93% considered their knowledge to be sufficient), their status on using healthcare services (89% did not use them), whether they were quarantined for suspected or diagnosed COVID-19 (97.6% were not quarantined) and the information sources used (78% obtained information from social media and official sources) (p>0.05). However, it was observed that if an acquaintance of the respondent was quarantined with

suspected or diagnosed COVID-19, this significantly increased the mean PSS score (18.4%, mean 44.0) (p<0.05).

It was found that there was a significant difference between the current employment status of the respondents (58% were employed) and the BRS, PSS and STAI mean scores (p<0.05). The BRS mean scores for the unemployed respondents (41%, mean 18.2) were significantly lower, and the PSS (mean 43.9) and STAI (mean 41.8) mean scores were higher (p<0.001). Participants who mostly considered the measures taken to be sufficient (69%) had significantly higher BRS (mean 19.4) and STAI (mean 41.8) mean scores than the respondents who found the measures taken to be insufficient (30%), and their PSS mean scores (mean 41.9) were also lower (p<0.001).

**Table 2.** Association between COVID-19 Pandemic experiences and psychological resilience, perceived stress and state anxiety(n=888)

	BRS			PSS		STAI	
	n (%)	Mean (SD)	p-value	Mean (SD)	p-value	Mean (SD)	p-value
Knowledge level about COVID-19							
Insufficient	57 (6.4)	18.1 (3.9)	0.102 <sup>€</sup>	44.1 (6.47)	0.124 <sup>€</sup>	40.5 (7.0)	0.634 <sup>€</sup>
Sufficient	831 (93.6)	19.1 (4.4)		42.6 (6.86)		40.9 (4.7)	
Knowledge resources about COVID-19							
Social media	151 (17.1)	19.3 (4.1)	0.567 <sup>II</sup>	42.8 (6.39)	0.810 <sup>II</sup>	41.5 (6.1)	0.313 <sup>II</sup>
Official resources	43 (4.9)	19.3 (5.4)		42.1 (7.0)		41.1 (4.5)	
Both social media and official sources	691 (78.1)	18.9 (4.3)		42.7 (6.9)		40.8 (4.7)	
Receive health care during the pandemic							
No	794 (89.4)	19 (4.3)	0.502 <sup>€</sup>	42.6 (6.8)	0.298 <sup>€</sup>	40.9 (4.9)	0.791 <sup>B</sup>
Yes	94 (10.6)	18.7 (4.7)		43.4 (6.6)		41.1(5.4)	
Being quarantined with suspicion or diagnosis of COVID-19 viruse of the person's own							
Quarantined	21 (2.4)	17.9(4.87)	0.230 <sup>€</sup>	44.4 (6.0)	0.234 <sup>€</sup>	43.7 (8.3)	0.133 <sup>€</sup>
Not quarantined	867 (97.6)	19.1 (4.38)		42.6 (6.8)		40.8 (4.8)	
Being quarantined with suspicion or diagnosis of COVID-19 viruse of someone in her/his environment							
Quarantined	163 (18.4)	18.8 (4.35)	0.566 <sup>€</sup>	44.1 (6.16)	0.006 <sup>*€</sup>	41.3 (5.7)	0.298 <sup>€</sup>
Not quarantined	725 (81.6)	19.1 (4.41)		42.4 (6.95)		40.8 (4.7)	
Precautionary measures against COVID-19							
Basic personal precautions	153 (17.2)	19.7 (4.48)	0.087 <sup>II</sup>	41.7 (6.5)	0.078 <sup>II</sup>	41.7 (5.8)	0.046 <sup>*II</sup>
Isolation	7 (0.8)	20 (3.65)		46.0 (7.3)		42.8 (4.5)	
Both of them	728 (8.2)	18.9 (4.38)		42.8 (6.8)		40.7 (4.7)	

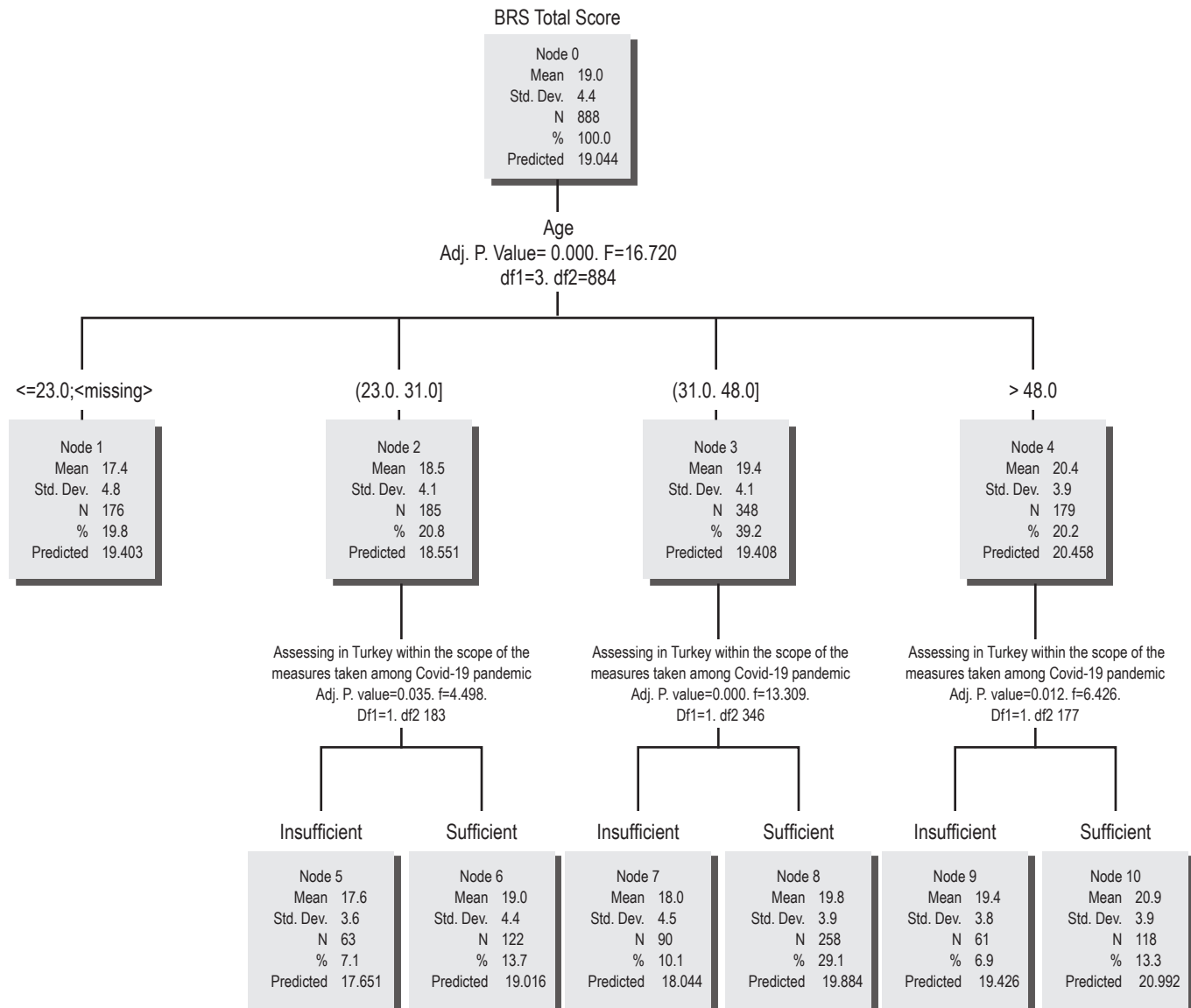
\*:p<0.05; II One Way ANOVA; € Student's t test; B Mann Whitney-U test

**Table 3.** Multidimensional analysis of the participants' working and evaluating the measures taken with independent variables (MANOVA)

	BRS				PSS			STAI		
	n (%)	Mean(S.D.	F	p	Mean(S.D.	F	p	Mean(S.D.	F	p
Working										
Yes	521 (58.7)	19.5 (4.1)	19.76	0.001*	41.8 (6.1)	20.95	0.001*	40.8(5.1)	0.36	0.001*
No	367 (41.3)	18.2 (4.6)			43.9 (7.5)			41.1(4.8)		
Measures taken										
Insufficient	274(30.9)	18.0 (4.3)	21.70	0.001* <sup>Ω</sup>	44.4 (6.9)	24.87	0.001*	40.7(5.1)	1.11	0.001*
Sufficient	614 (69.1)	19.4 (4.3)			41.9 (6.6)			41.1(4.8)		

When the decision tree analyses in Figure 1 were examined, it was found that the most important variable in predicting a high BRS mean score for the respondents was age (p<0.001). The age variable affecting psychological resilience was divided into four categories: ≤ 23 years, 23–31 years, 31–48 years and >48 years. Similar to the

results of the Pearson analysis, although the BRS scores of the participants rose with age, the participants in the >48 age group (mean 20.4) had the highest BRS scores. Another variable that significantly predicted the BRS scores of respondents in most age groups (23–31 years, mean 19.0; 31–48 years, mean 19.8; >48 years, mean 20.9), except

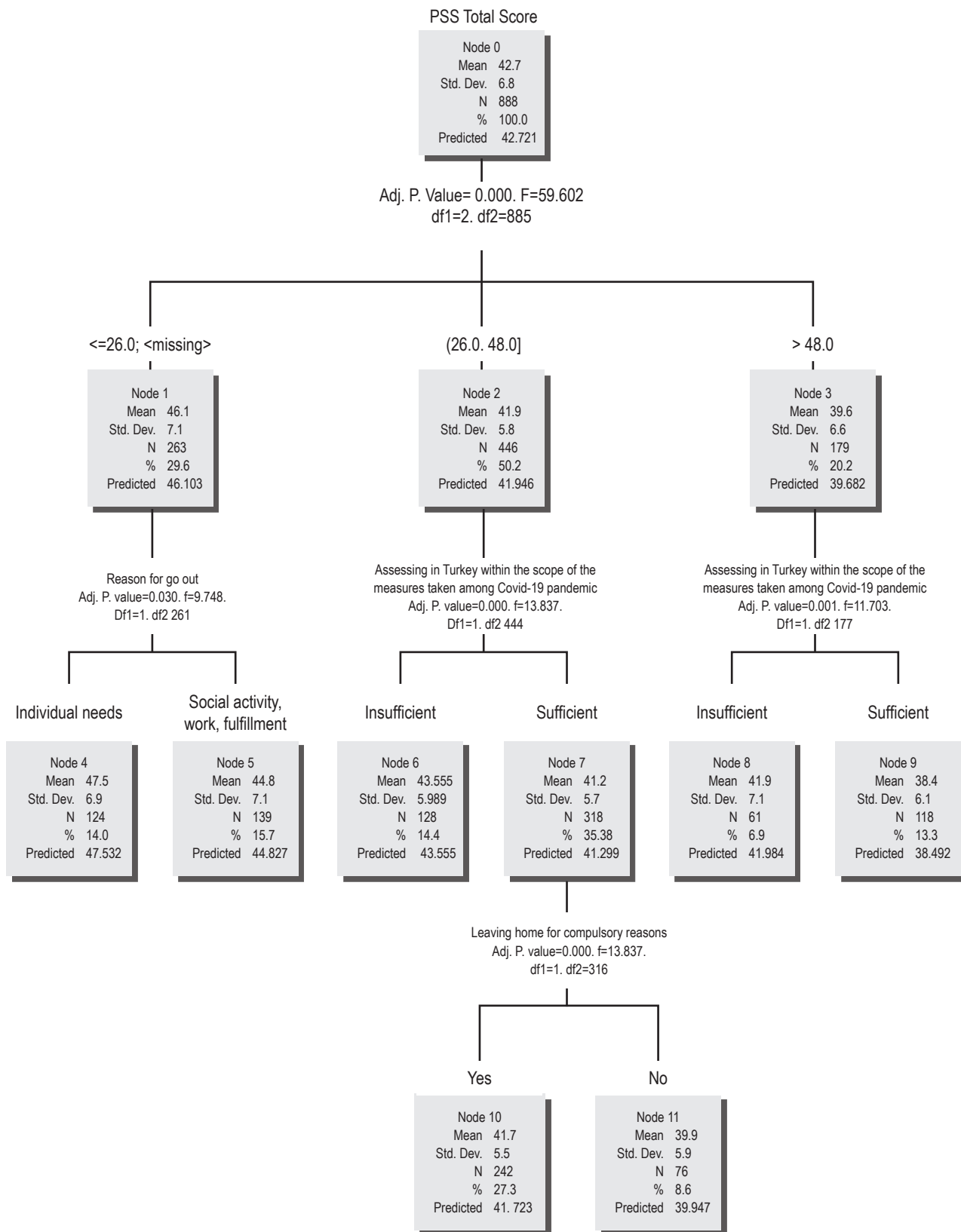


**Figure 1.** Decision tree according to BRS

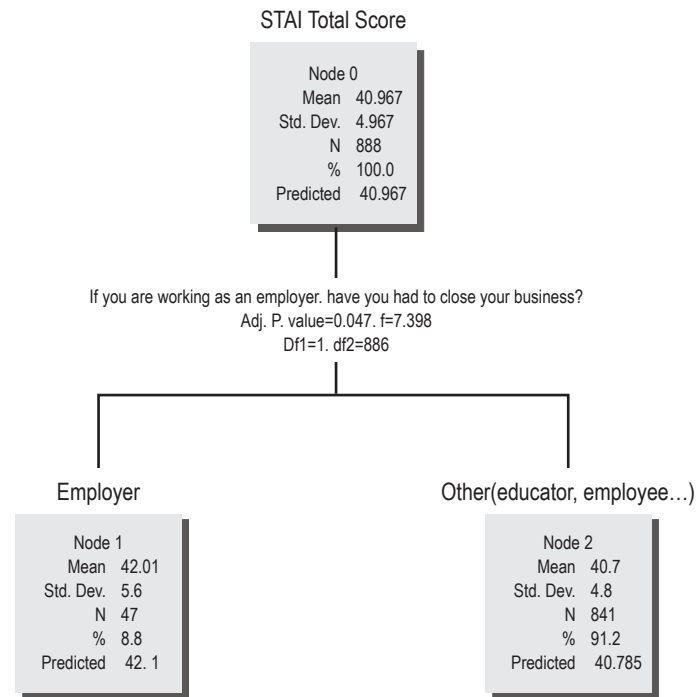
the <23 age group, was whether or not the respondents considered the measures taken in Turkey to be adequate. As seen in nodes 6, 8 and 10, the BRS mean scores of the respondents that stated that they considered the Turkish measures to be adequate were significantly higher.

The most significant variable in predicting high PSS mean scores was age ( $p=0.000$ ), which was the same as for the BRS scores. The age variable that significantly predicted the PSS mean scores was divided into three categories:  $\leq 26$  years, 26–48 years and  $>48$  years. Similar to the results of the Pearson analysis, although the perceived stress of the participants decreased as the age increased, the participants in the  $>48$  age group (mean 39.6) had the lowest PSS scores. The variable that significantly

predicted the PSS mean scores of the participants in the  $\leq 26$  age group was the reason why they had to go out during the course of the pandemic ( $p=0.030$ ). Having to go out to meet their basic needs significantly increased the PSS mean scores (mean 47.5) of the participants in the  $<26$  age group. The variables that significantly predicted the PSS mean scores of participants in the 26–48 age group were whether or not the respondents considered the measures taken in Turkey to be adequate ( $p=0.000$ ) and having to go out ( $p=0.018$ ). Of the participants in the 26–48 age group, those who considered that the measures taken were inadequate (mean 43.5) and those who had to go out for compulsory reasons during the pandemic (mean 41.7) had higher PSS mean scores.



**Figure 2.** Decision tree according to PSS



**Figure 3.** Decision tree according to STAI

Finally, Figure 3 shows that the most important variable in predicting the STAI mean scores of the participants was whether the respondent was an employer or an employee ( $p=0.047$ ). The STAI mean scores of employers (mean 42.1) were higher than the mean scores of employees (40.7) (insert Figure 3 here).

## DISCUSSION

The results show that the level of stress perceived by the Turkish people is high, the level of anxiety is moderate, and their psychological resilience is high. The variables that increase stress levels are being younger, considering measures taken by the government to be inadequate, needing to go out for compulsory reasons, being unemployed and having an acquaintance/family member in quarantine with suspected or diagnosed COVID-19. The variables that increase state-trait anxiety levels are being an employer, being unemployed, losing income and considering the measures taken by the government to be inadequate. The variables that decrease psychological resilience are being younger, considering the measures taken by the government to be inadequate and being unemployed.

Earlier studies examining the effects of the pandemic on mental health have also shown that stress levels in the population are high (Wang et al., 2020) and anxiety levels are moderate (Olaseni et al., 2020; Wang et al., 2020) or high (Nelson et al., 2020; Li et al., 2020). A recent meta-analysis study also reported that the prevalence of mental health problems during COVID-19 is higher than during SARS or other types of epidemics (Yuan et al., 2022). Despite this, the results of our study have shown that the mental health of the Turkish population has been less affected than expected by the pandemic. Similar to our findings, a meta-analysis reported a small effect of the lockdowns on mental health, indicating that people were generally resilient during the first wave of the pandemic (Prati & Mancini, 2021). Similarly a recent meta-analysis reported that mental health problems were different among the different countries which could be postulated by different cultures, severity of epidemic, and strategies applied across countries. This situation could be explained by Turkish people's thinking that the preventative measures taken by the government are adequate. Indeed, as with this study, other studies have demonstrated that the presence and adequacy of preventative measures taken by governments is a significant predictor of the psychological effects of the pandemic (Leung et al., 2003; Brooks et al., 2020; Knipe et al., 2020; Hu et al., 2023; Wang et

al., 2021; Yuan et al., 2022). Turkish people consider that Turkey is among the countries that have been successful in combatting the pandemic (Bostan et al., 2020). Therefore, governments should understand and not ignore the important protective effects of high social trust in public health measures, on mental health. It is necessary to provide accurate public health information about the virus and its spread to reduce people's anxiety and fears (Hu et al., 2023; Rubin & Wessely, 2020; Yuan et al., 2022).

In our study age was found to be the most important variable in predicting both the stress levels and the psychological resilience. As the age of the respondents decreased, their perceived stress increased, and their psychological resilience decreased. Other studies support these findings, showing that increasing age is a protective factor for perceived stress (González Sanguino et al., 2020; Kang et al., 2020; Yuan et al., 2022). On the other hand, some studies have found that age does not have any significant effects on perceived stress (Pearman et al., 2020; Wang et al., 2020). Previous studies (Pearman et al., 2020; Harari et al., 2022; Çay et al., 2023) also found that the psychological resilience of the respondents increased in line with their age, and suggested that people's coping skills improve with age. In this study, the positive relationship between older age and mental health can be explained by the fact that as individuals get older, they develop strength through life experiences, which means they can cope with difficulties better than younger people (Charles & Luong, 2013; Yörük et al., 2022). Older people also tend to have larger social support networks, which positively impact their mental health (Cornwell & Laumann, 2015). It has been found that the losses experienced by older adults in their lives (such as retirement or losing their spouse) cause them to establish new social relationships, and this improves their ability to adapt to difficult circumstances (Donnelly & Hinterlong, 2010; Cornwell & Laumann, 2015).

Although the anxiety levels of the participants were moderate, the anxiety levels of those who were employers were significantly higher. Also, the perceived stress of those who were currently unemployed was higher, and their psychological resilience was lower. Supporting these findings, other studies have found that employers and unemployed individuals were the groups most affected by this crisis, due to the economic downturn, increased unemployment, financial insecurity and poverty caused by the virus (Açıkgöz & Günay, 2020; Moreno et al., 2020). This means that increasing concerns and fears about the financial and work-related implications of the pandemic are mostly experienced by employers and the

unemployed (Knipe et al., 2020; Moreno et al., 2020). Li et al. (2020) showed that the fear that people experience regarding incomes, employment or being able to pay existing debts significantly affects their anxiety levels. Anxiety and fear about the economic implications of the pandemic may be more prevalent in developing countries such as Turkey as their economies become even more fragile. Regarding the positive impact of preventative measures on mental health, despite the provision of economic stimulus packages in Turkey, they have not been perceived to be very effective for employers or the unemployed, so have not had a positive impact on mental health. Due to this, it is very important to implement financial support packages that include detailed action plans (salary support, tax exemption, extended loan repayment, etc.) in order to improve the mental health of employers and the unemployed.

This study has several limitations. Due to the risk of infection, we adopted the snowball sampling strategy. Moreover, the data were collected in a short period of time during the pandemic's early phase. Thus, the observed trends might have changed after the data collection period. Therefore, the study population did not reflect the characteristics of the general population. As a result, the present findings are not able to generalise the conclusion for the entire population, especially regarding people with less education and lower incomes. There were very few people with a history of contact or who had sought medical consultation. Our findings could not be generalised for confirmed or suspected COVID-19 cases. The respondents may have provided socially desirable responses in terms of whether or not they considered the preventative measures taken by the government to be adequate.

## CONCLUSIONS

This study aimed to analyse the stress, anxiety and psychological resilience levels among general population in Turkey during the COVID-19 pandemic and the variables that could predict them. During the COVID-19 outbreak in Turkey, general population have lower psychological impact of the outbreak with lower anxiety, higher psychological resilience exclude higher levels of stress. The findings represent the situation in Turkey during the first wave of the COVID-19 pandemic. Research into the changing patterns of protective and risk variables in mental health must continue.

**Ethical Considerations:** Does this study include human subjects? YES

Authors confirmed the compliance with all relevant ethical regulations.

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draft, review and editing. Arzu İçağasioğlu Çoban: resource and process management, original idea, advisor in design and preparation of the draft, the contribution of ideas, data collection, review and editing. Seda Attepe Özden: advisor in design and preparation of the draft, the contribution of ideas, data collection, review and editing. Beyza Yılmaz: the contribution of ideas, data collection, analysis of data, writing of the draft. Selin Koçak: the contribution of ideas, advisor in design and preparation of the draft, data collection. Mustafa Agah Tekinda: analysis of data.

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