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A CROSS-SECTIONAL EXAMINATION OF THE EFFECTS OF COVID-19 ON TURKISH COMMUNITY: AN INTEGRATED PERSPECTIVE OF SOCIAL, ECONOMIC AND PUBLIC HEALTH ISSUES

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Starting from China, COVID-19 has spread to countries from different continents and is defined as "pandemic" by WHO. Countries implemented many measures to block the spread of the virus. These measures related to COVID-19 pandemic has affected many people not only in terms of health status but also with social, economic, and psychological dimensions. This study aimed to provide an understanding of the effects of the COVID-19 on the Turkish population. The study is cross-sectional and quantitative. A survey was conducted to collect data from a total of 1021 participants from different cities in Turkey. Confirmatory factor analysis, descriptive statistics, Mann Whitney U, and Kruskal Wallis tests were conducted. The study revealed that the burden of social, economic, and public health effects of COVID-19 were significantly different according to the demographic features of the sample. The results also indicated that there were significant relationships between social, economic effects and anxiety levels of the population.

Keywords: COVID-19, Pandemic, Effects, Socio-economic, *Turkey.*

INTRODUCTION

The novel coronavirus which is called COVID-19 has spread rapidly all over the world. According to World Health Organization (WHO), there were over 3 million confirmed cases globally by the date of 30 April 2020 [1]. Even though COVID-19 is known as a member of the Coronavirus family which includes outbreaks such as SARS and MERS, it has been reported as much more widespread when compared to previous outbreaks. WHO indicated that 8422 people with SARS and 916 deaths [2]. The confirmed deaths from COVID-19 was 217.769 by the date of 30 April 2020 [1]. The symptoms of the COVID-19 have been reported as fever, cough, sore throat, headaches, in some cases difficulty in breathing, and at worst pneumonia. Elders, people with chronic diseases such as diabetes, blood pressure, heart diseases or, respiratory diseases have been reported as the most vulnerable groups and have five times higher risk of death in case of effecting COVID-19 [3].

Starting from China, COVID-19 has spread to countries from different continents and is defined as "pandemic" by WHO [4]. With the success of the methods applied in China, these methods and the methods developed by the countries in accordance with their own characteristics have come into force. Indeed, it has been determined that the sharp measures taken in China have stopped the spread of COVID-19 [5]. WHO stated that several public health measures must be taken to stop the pandemic and these measures should be implemented with the integration of all members of the society. Therefore, both local and central governments should implement strict measures and individuals are expected to comply with the measures taken by the governments. These measures include detecting and isolating cases, monitoring the contact paths of cases and applying quarantine, complying with social and physical distance rules. Besides, travel restrictions should be implemented. Within the scope of breaking the transmission chain and physical and social distance applications, some other measures such as distance work, distance education, closure of non-compulsory service facilities are also required. Individual measures include increased hygiene and frequent hand washing and using masks. In addition to taking all these precautions, it is important to carry out as many tests as possible on suspicious cases and to examine their contacts in order to control the pandemic. In addition to efforts to control the pandemic, countries should support citizens both socially and economically [6,7].

Turkey has also taken a series of measures against the pandemic, like other countries. First of all, formal education was terminated and distance education was introduced. Teleworking and shift working systems were adopted in sectors where it is possible to apply. Shopping malls, hairdressers, beauty centers were temporarily closed. Intercity travel in 31 cities (it was 24 by 16th of May) was restricted and subjected to permission. Besides, a temporary curfew was imposed in these cities. In all cities, the activities of theaters, cinemas, show centers, restaurants and cafes, swimming pools, amusement parks, sports centers, etc. were temporarily canceled. The use of masks was made compulsory in markets and public vehicles. It was provided to hold meetings that cannot be canceled in accordance with the social distance. In addition, regulations were made for ongoing business procedures in many sectors. The number of tests has been steadily increased. People with whom the detected cases are in contact have also been identified and tested or quarantined. Turkey has also started to take steps to strengthen the health system infrastructure by building hospitals in order to manage the future spread of COVID-19 or other pandemics. On the other hand, some of the existing hospitals have been announced as pandemic hospitals. COVID-19 has been included in the scope of social insurance and payments have

been made to hospitals. Considering the situation in the world, domestic production has been increased rapidly in order to avoid the shortage of masks, overalls, gloves and ventilators. As a result of the measures, the spread of the disease has been reduced and it is expected to be under complete control in a short time. In this respect, Turkey has prepared the normalization plan, and it is expected to be in force within a short period of time.

COVID-19 pandemic has affected many people not only in terms of health status but also with social, economic and psychological dimensions. COVID-19 has negative effects on the economy by slowing down daily life. Nearly all countries put forth many strict bans to social life with the aim of preventing the spread of the virus. A strict quarantine has been continuing all around the world which effects people intensively. Most of countries has declared obligatory measures to slow down economic and daily life. Slowing down in economic and social life causes revenue loss, high level of stress and anxiety, social distancing from relatives, difficulty to meet some needs and so on [8].

There is very limited data on social and economic effects of COVID-19. Some studies examined the psychological impact of COVID-19, and anxiety level of population during pandemic for different samples such as; college students in China [9], China general population[10], Indian general population [11], American healthcare professionals [12], Turkish health employees [13]. There are some studies which investigating the effects of COVID-19 on the economy globally or by countries with a macroeconomic perspective [14-15]. To the best of our knowledge, there is not sufficient quantitative study which examine the integrated effects of COVID-19 on social, economic and public health issues for the populations. Therefore, we aimed to provide a comprehensive understanding of COVID-19s' effects on social life, economic life and public health in Turkey. We also determined the general anxiety level of Turkish population and investigated the burden of social, economic and public health effects on general anxiety level. The study sought to answer the following questions:

1. What is the burden of COVID-19 pandemic on the population in terms of social, economic and public health issues?
2. What is the effect of COVID-19 pandemic on different socio-economic groups in the population?
3. Is there a relationship between the general anxiety level of the population and COVID-19 related effects?

METHODS

The study is cross-sectional, descriptive, and quantitative. The data obtained via a questionnaire form. The STROBE statement was used as a guideline for reporting [16].

Statistical Methods

The sampling strategy was based on determining a target population that could be representative of the Turkish population. The target population comprised of people who live in Turkey's largest cities in terms of population. Relying on the authors' network, we determined some cities from Turkey's each geographical region to include participants from different economical and sociological conditions.

The study included participants from Istanbul, Ankara, Mersin, Adana, İzmir, Samsun, Kayseri, and Van which can strongly represent the Turkish population. Due to lockdown and quarantine conditions, the survey was conducted on the online platform Google Forms. We used a non-probability snowball sampling technique to include as many participants as possible. We sent a link of the questionnaire to possible participants and ask them to distribute it to their networks. The data was collected for 10 days. A total of 1021 participants were received.

Measures

The data collection instrument comprised of a questionnaire that inquired demographic information, a scale on social/economic/public health effects which is developed by researchers, and General Anxiety Disorder Scale (GAD-7). The scale on effects of COVID-19 was developed according to literature which discussed above and experts' opinion. Respondents rated each statement in the scale using a 5-point Likert type ranging from 1 (not at all like me), 5 (very much like me). GAD-7 [17] translated to native language, Turkish. Respondents rated each symptom of anxiety a scale from 1 (not at all)-4 (Nearly every day).

Data Analysis

Validity and reliability analysis was conducted for scales. Confirmatory factor analysis was conducted to measure construct validity. Cronbach alpha coefficient was used for internal consistency. An analysis of descriptive statistics was conducted to summarize the respondents' demographic features. Statistical tests were conducted to evaluate the effects and anxiety level according to demographic variables. The relation between social/economic/public health effects and anxiety level was examined by conducting a correlation test. Data were analyzed with SPSS 20.00, and LISREL 8.80 version.

Ethical Considerations

The ethics committee of Tarsus University approved the study. The informed consents of participants were obtained. The design of the study is complied with Declaration of Helsinki regarding on human participants.

RESULTS

Confirmatory Factor Analysis

We conducted a preliminary analysis to examine the construct validity of the developed scale and translated General

Table 1. Fit Indices of the Model

Fit Indices	X^2	df	X^2/df	GFI	CFI	IFI	RMSEA
Acceptable Value	-	-	<3	>0.90	>0.90	>0.90	<0.08
Model Value	199,848	171	1.169	0.902	0.981	0.981	0.032

Table 2. Internal Consistency of the Scales

	Cronbach Alpha
Social Effects	*0.760*
Economic Effects	*0.793*
Public Health Effects	*0.788*
Anxiety Scale	*0.903*

Tabel 3. Demographic Characteristics

Variables		N	%
Gender	Female	715	70
	Male	306	30
Occupation	University Students	388	38
	Civil Servant	188	18,4
	Private Sector Employee	220	21,5
	Tradesmen	29	2,8
	Unemployed	196	19,2
Infected by COVID-19	Yes	13	1,3
	No	1008	98,7
Relatives with COVID-19	Yes	104	10,2
	No	917	89,8

Table 4. Working Status of Civil Servants, Employees and Tradesean

Working conditions during the pandemic	Full Time	133	30,5
	Part-Time	94	21,5
	Home office	142	32,5
	Unpaid Time off	40	9,1
	Lose job due to pandemic	28	6,4

Anxiety Level Scale. The sample of the pilot study consisted of 165 respondents. We developed a scale with 14 items to evaluate the COVID-19 related social, economic and public health effects. We shaped a measurement model with four factors which were "social effects", "economic effects", "public health effects" and "anxiety" level". We performed a CFA to test whether the four-factor model fitted our data. The results showed that the fit indices were at acceptable rates as shown in Table 1.

The Cronbach alpha coefficients of the scales were found to be sufficient as shown in Table 2.

It was concluded that the measurement model was suitable to further analysis.

Descriptive Statistics

The demographic characteristics of the 1021 respondents are as shown in Table 3. Among respondents, % 70 were women. The distribution of the sample according to occupation includes civil servants, employees, tradesmen, university students, and unemployed. % 1, 3 of respondents have infected by COVID-19 and cured. %.10,2 of them have relatives who went through COVID-19.

%6.4 of respondents indicated that they lost their job because of the pandemic. Many participants are currently working part-time and home office. A few of them are at the unpaid time off (Table 4).

Table 5. Analysis of Relationship between Effects and Demographic Characteristics

	Social Effects		***Economic Effects***		***Public Health Effects***	
	Mean Rank	*p*	*Mean Rank*	*p*	*Mean Rank*	*p*
Gender		*0.009**		*0.020**		*0.000**
Female	*526,66*		*497,01*		*535,44*	
Male	*474,40*		*543,68*		*453,88*	
Occupation		*0,911***		*0,000***		*0,040***
University Student	*502,4584*		*516,38*		*487,90*	
Civil Servant	*506,76*		*339,28*		*517,52*	
Private Sector Employee	*524,22*		*557,16*		*518,64*	
Tradesman	*499,71*		*704,17*		*583,24*	
Unemployed	*518,84*		*584,67*		*549,03*	
Working conditions during pandemic		*0,233***		*0,000***		*0,825***
Full Time	*552,14*		*489,17*		*503,96*	
Part-Time	*496,53*		*477,91*		*542,34*	
Home office	*476,89*		*435,56*		*514,05*	
Unpaid Time off	*496,41*		*644,69*		*527,50*	
Lose job due to pandemic	*513,57*		*535,18*		*505,62*	
Infected by COVID-19		*0,005**		*0,222**		*0,861**
Yes	*736,38*		*609,96*		*525,04*	
No	*508,90*		*509,72*		*510,82*	
Relatives with COVID-19		*0,084**		*0,040**		*0,935**
Yes	*558,25*		*567,17*		*513,21*	
No	*505,64*		*504,63*		*510,75*	

**Mann Whitney U test.*
***Kruskal-Wallis test.*

Table 6. Analysis of Relationship between Anxiety Level and Demographic Characteristics

	General Anxiety Level Mean Rank	*P-value*
Gender		*0,000**
Female	*542,20*	
Male	*438,10*	
Occupation		*0,000***
University Student	*565,66*	
Civil Servant	*414,40*	
Private Sector Employee	*499,29*	
Tradesmen	*444,83*	
Unemployed	*518,39*	
Working conditions during the pandemic		*0,000***
Full Time	*459,54*	
Part-Time	*416,05*	
Home office	*499*	
Unpaid Time off	*553,45*	
Lose job due to pandemic	*540,96*	
Infected by COVID-19		*0,347**
Yes	*587,23*	
No	*510,02*	
Relatives with COVID-19		*0,083**
Yes	*558,46*	
No	*505,62*	

**Mann Whitney U test.*
***Kruskal-Wallis test.*

The Relationship between Demographic Variables and Effects of COVID-19

Table 5 shows the relationship between the demographic variables and COVID related effects. Occupation and working conditions during pandemic had a significant effect on the factors. It can be seen that civil servant was the minimal affected group from COVID-19's economic effects on the population. Moreover, the group on unpaid off during the pandemic had most effected in terms of economic effects ($p<.05$). Occupation and working conditions had no significant effect on factors ($p>.05$).

Analysis of Relationship between Anxiety Levels and Demographic Characteristics

Gender, occupation and working condition had significant impacts of anxiety level ($p<.001$). Civil servants had the lowest anxiety level when compared to private sector ones who lost their job and on unpaid time off. However, there were no effects of infected by COVID-19 or have relatives with COVID-19 on anxiety level.

Correlation Between the effects of COVID-19 and Levels of anxiety

The results of the analysis are shown in Table 7. COVID-19 related social effects were positively related to the anxiety level of respondents ($r=0.364$, $p< .001$). Additionally, economic effects were positively related to anxiety level ($r=0,322$, $p<.001$). However, our results indicated that there was no significant relationship between the effects of public health and anxiety level ($p>.05$).

Table 7. Correlation between COVID-19 related Effects and Anxiety Level

	Anxiety Level correlation coeficient	P***
Social effects	*0,364*	0.000
Economic effects	0,322	*0.000*
Public health effects	-0,026	0.406

****Corelație Spearman*

DISCUSSION

Some studies have revealed that the COVID-19 outbreak has many effects on populations [9-11,18-24].

In a study conducted in Kerala/India, it was concluded that 90% of the participants experienced a decrease in their income and this decrease was a high amount for 37%. The highest decline in income was experienced in wage-workers and self-employed, while civil servants were the least affected by the loss of income. The happiness of the participants was found to be low. The curfew was found to harm the participants financially, mentally and physically. In particular, uncertainty and income changes were reported to frighten households. 63% of the participants stated that they were not happy. While %60 of civil servants stated that they are happy, the unhappy groups were unemployed, wage workers and self-employed [23].

In a study stating that unemployment due to COVID-19 was the biggest unemployment since the "Great Depression", it was concluded that minority groups were disproportionately affected by unemployment [25]. According to the ILO, 25 million people worldwide are in danger of losing their job due to COVID-19 [26]. In another study, it was reported that COVID-19 has increased the unemployment rate, reduced the hours worked and labor force participation, and the groups most affected by the negative effects of COVID-19 in the labor market were men, Hispanics and people with low education level [24].

In a study conducted in the United States, it was stated that unemployment due to COVID-19 cause not only economic problems, but also losing health insurances provided by employer [27]. Economic problems and unemployment may also adversely affect health conditions and cause some stress -related problems.

Alongside physical problems, high rates of morbidity and mortality, COVID-19 also causes serious psychological problems [10]. It has been stated that the number of people with mental disabilities who may seek help from mental health services due to COVID-19 is likely to increase. It has also been stated that economic shrinkage due to COVID-19 can cause mental problems especially on vulnarable groups [28]. Many studies related to the current and possible psychological effects of the pandemic have been conducted. In some of these studies, although the pandemic causes mild stress in some groups, it has been reported that it may cause excessive panic and anxiety in the future [29].

The main goal of this study was to evaluate the effects of COVID-19 pandemic on Turkish population in terms of social, economic and public health issues and examine the relationship between effects and anxiety level. This study indicated that the burden of social effects was higher for females while the burden of economic effects was higher →

for males. We found that private sector employees were the most affected groups in terms of economic consequences. It has been indicated that the general anxiety level of females and university students were significantly high when compared to other groups. The distant learning methods may be the most important driver of university students' anxiety level. The groups with on unpaid time off and which lose their job had significantly higher anxiety level than others.

The study indicated that there were significant relations between social and economic effect of COVID-19 and anxiety level. A study which was conducted in China revealed a relationship between worry about economic influences of COVID-19 and anxiety level of the college students [9]. A study in India indicated that people stated about their fears of being infected by the virus, reduced their social contacts, stocked some essentials at home etc. [11].

In a review study examining the effect of COVID-19 on global mental health, it was reported that pandemic cause stress, anxiety and depressive symptoms in addition to current burden of global mental health problems. Besides, it has been found that insomnia, anger and fear are also common globally. Collective concerns have been reported to affect daily behavior and the economy [30]. A study reported that half of the participants experienced anxiety from mild to high levels [31]. In another study, the overall anxiety disorder of the participants was found to be 35.1% [32]. In a study, it was found that the economic and social effects of COVID-19 and academic delays were positively associated with anxiety [9]. In a comprehensive study conducted with 52,730 participants in China, it was determined that 35% of the participants had psychological problems. It was determined that women suffer more than men and another vulnerable group is refugee workers [33]. In a study conducted in Iran, it was reported that the anxiety level of those who follow the news about COVID-19, women and the age group of 21-40 was higher. The highest level of anxiety belonged to the group in which at least one family member, friend or someone they know was caught COVID-19 [34].

There was no significant relationship between public health effects of COVID-19 and anxiety level. This may be a feeling of confidence related to people's accordance with measures. There are some evidences to support this idea. A study indicated that Turkish society take compliance with the protective measures [35]. On the other hand, in a study conducted in India, it was found that although the participants knew about preventive measures, their anxiety levels were high and some experienced sleep problems [11]. Therefore, caution should be exercised when establishing cause-effect relationships.

Limitations

The study is limited to its' sample. The sample consist of 1021 volunteer who could be reached online which limits the generalizability of the study findings. However, the sample consisted of individuals from different cities with different socio-economic status. Therefore the sample size provided enough power to detect between-group differences and can be considered as representative of Turkish population. Studies in Turkish and English languages could be reviewed. The study is also limited to the questionnaire and the responses given to this questionnaire.

CONCLUSIONS

It was determined both in this study and in other studies in the literature that COVID-19 negatively affects economic and social life, and causes various levels of psychological pressure and anxiety in societies. Besides, it was determined that countries have engaged in intensive public health efforts to combat COVID-19, and pandemic have been brought under control in some countries as a result of compliance with these efforts and measures. However, there was no relationship between the intensity of public health efforts and anxiety levels of individuals. Studies related to the post-pandemic period are required worldwide. Measures need to be taken for economic problems in the society, especially for vulnerable groups. In addition, it is important to take measures and adapt to the measures taken in order to start social life in a controlled manner. While pharmacological research and vaccine development efforts are ongoing, compliance with the public health measures and efforts towards the social and economic situation will facilitate the transition to the post-pandemic period. Psychological problems that societies face should be taken into consideration and applications should be developed especially for the relief of fear, panic, anxiety and depressive symptoms. This study proposes that countries should have integrated efforts and perspectives in terms of social, economic and public health issues to provide a sufficient protection and rehabilitation process in normalization and post-pandemic phase.

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Declaration of Conflicting Interest

The authors declared no potential conflict of interests with respect to the research.

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Appendix

COVID-19 Related Effects Scale

1. I feel lonely during the pandemic.
2. I'm constantly worried about being infected by the virus.
3. I'm constantly worried about transmitting the virus to my family.
4. I feel a requirement to increase my knowledge level about disease prevention.
5. I'm constantly in an effort to protect myself and my family from the virus.
6. I have been experiencing a revenue loss during the pandemic.
7. I cannot meet even some basic needs during the pandemic.
8. I have difficulty in meeting the needs of my households during the pandemic.
9. I postponed to meet my many needs due to pandemic.
10. I'm worried about to be laid off during the pandemic.
11. I comply with the determined rules and suggestions for health as much as possible.

12. I tried to improve dietary habits during the pandemic.
13. I tried to keep my immune system strong during the pandemic.
14. I tried to preserve my mental health during the pandemic.

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