Research Article
Received: 28.03.2022
Accepted: 26.02.2023
Published: 31.03.2023

Journal of Disaster and Risk
6(1), 2023, (57-69)
e-ISSN: 2636-8390
DOI: 10.35341/afet.1094784

Reflection of COVID-19 in The Context of Posttraumatic Growth in Turkish Society

Çağla Yiğitbaş[1], Ayşe Elkoca[2], Handan Özcan[3]

Abstract

The aim of the study was to determine whether the COVID-19 pandemic had a positive impact on posttraumatic growth and to identify the influential factors. Quantitative method was used. A descriptive cross-sectional study was conducted. Permissions were obtained before the research. The sample size was calculated with the formula t2xs2/d2. After the calculation, 106 people who consented to participate in the study were reached. Data were collected by convenience sampling method. The mean age of the participants was 31.61 ± 11.05 years. 58.5% of the participants were female and 44.3% were married. The rate of those who said they had a high income was 9.4%. More than half of the participants stated that they experienced anxiety due to the pandemic, and more than half stated that they had this disease at home. Those who reported that they were not currently working, those who thought that their mental health was affected, and those who reported experiencing anxiety due to the pandemic had higher scores on the Posttraumatic Growth Inventory. Posttraumatic growth and its sub-dimensions were found to make a difference in terms of some sociodemographic characteristics. Repeating this research in different cultural societies will be decisive and clarifying in terms of results.

Keywords: COVID-19, Post-Traumatic Growth, Sociodemographic Characteristics, Turkey Sample

1. INTRODUCTION

The coronavirus (CoV), the causative agent of COVID-19, can cause a wide range of diseases, from mild infections to potentially fatal infections. While some CoV types can be found in humans and even circulate among humans, some types (such as SARS-CoV transmitted by cats and MERS-CoV transmitted by Bactrian camels) can be found in animals and infect humans (Şirin, 2020:323). It has been stated that COVID-19 disease, defined as "2019-nCoV" in the literature, is different from its previous types but it did not originate in a laboratory as a bioweapon as it is a naturally mutating virus (Aslan, 2020:324). It has also been confirmed that the coronavirus has infected people on all continents except Antarctica (McMichael, 2020:325). Moreover, relevant studies have reported that pandemic has caused economic, social, and psychological traumas all over the world . It has also been noted that individuals' post-traumatic reactions may differ, from anxiety, depression, and post-traumatic stress disorder in some individuals to positive changes in dimensions such as the meaning of life, improvement of relationships, and perception of personal

[1] Assoc. Prof. Dr. Giresun University, Faculty of Health Science, Department of Midwifery, Giresun, Turkey
Corresponding author e-mail: cagla.yigitbas@giresun.edu.tr ORCID: 0000-0002-3789-1156
[2] PhD, Gümüşhane University, Vocational School of Health Services, Gümüşhane, Turkey
E- mail: ayse.elkoca@hotmail.com ORCID: 0000-0002-3936-4122
[3] Assoc. Prof. Dr. University of Health Sciences, Faculty of Health Sciences, Department of Midwifery, Istanbul, Turkey
E-mail: hndnozcn@hotmail.com ORCID: 0000-0002-7131-1856

To cite this article
Yiğitbaş, Ç., Elkoca, A. ve Özcan, H. (2023). Myth Evaluations of Nursing Students about Older Adults during Disasters. *Journal of Disaster and Risk,* 6(1), 57-69.

empowerment in some others (J. E. Shakespeare-Finch, Smith, Gow, Embelton, & Baird, 2003). In post-traumatic growth, there is a positive experience of change and an increase in functionality level, emerging with the struggle after vital post-crisis. Post-traumatic empowerment, on the other hand, brings about reordering priorities and making sense of life, improving relationships, increasing self-awareness, realizing new possibilities, and experiencing psychosocial and spiritual changes. Studies examining the effects of pandemics/epidemics/outbreaks on change, development, and empowerment in individuals and society have reported that such health crises caused fear, anxiety, and panic in the masses due to their deadly nature (Chua et al., 2004; Davidson, 2020; Mak, Chu, Pan, Yiu, & Chan, 2009) but also resulted in positive outcomes such as increased assistance, solidarity, and self-awareness among people and realizing new possibilities (Calhoun & Tedeschi, 1999). Positive changes in the aftermath of trauma are defined as "perceived benefit," "stress-related growth," or "post-traumatic growth" (Calhoun & Tedeschi, 2004). Initially, post-traumatic growth was studied on people exposed to trauma such as earthquakes and other natural disasters (Y.-J. Guo et al., 2004; Karanci & Acarturk, 2005). Later, it began to be studied in the healthcare field. Post-traumatic growth was mostly studied on those with life-threatening diseases such as cancer and coronary artery disease (Kanat & Özpolat, 2016; Nenova, DuHamel, Zemon, Rini, & Redd, 2013; Özçetin & Hiçdurmaz, 2017; Sarısoy, 2012) and on parents with kids with health problems (Elçi, 2004; Duman, 2019) .

While detrimental effects on mental health are frequently measured using a variety of standardized techniques, resilience seems to be more difficult to measure experimentally (Doorn et al., 2022). Resilience can be measured with self-designed scales (Barzilay et al., 2020) or various validated standardized scales. Recent studies on the COVID-19 pandemic's consequences, which has been a painful experience for many (Griffin, 2020; Prout et al., 2020; Sawhney et al., 2020), have shown that some people see a gradual decline in symptoms and suffering (Barzilay et al., 2020; Ran et al., 2020). Feingold et al., who investigated the impact of the COVID-19 pandemic on healthcare workers in the United States, reported that they measured moderate PTGI after the pandemic.

The present study aims to investigate whether the COVID-19 pandemic has had a positive effect on Turkish society in terms of post-traumatic growth and the factors that may affect this situation.

2. MATERIALS AND METHOD

2.1. Type of Study

Quantitative method was used in the study. Data were collected with a descriptive cross-sectional approach.

2.2. Participants

The participants were invited to the study electronically. Participants filled out the questionnaires through the online survey platform. Written permission was obtained from the Scientific Research Platform of the Ministry of Health prior to the study. In accordance with the Helsinki Declaration criteria, the participants were informed with an informative text included on the data collection form, and the data were collected from "volunteering participants who reported that they did not have any psychiatric disease diagnosed by the physician."

2.3. Measures and Procedure

While calculating the sample size, t^2*s^2/ d^2 formula was used in accordance with the principle of "the dependent variable is quantitative in groups where the population is not known" (Aktürk & Acemoğlu, 2012). For this research, Karataş's work (Karataş, 2020) was taken as a reference study. In Karataş's research, the standard deviation value of the Post-traumatic Growth Inventory (PTGI) is given as 1.10. Since the difference between dependent variables and independent

variables was to be investigated, Cohen's effect size was taken as 0.2 in this formula. Accordingly, when the values were placed in the formula (t = 1.96, s = 1.10, d = 0.2), the minimum sample size (n) was calculated as 106 people. For sampling, the simple random sampling method was used. Since the government of the Republic of Turkey advised the public to minimize face-to-face interaction and isolate themselves at home,

Data collection tools were the Personal Information Form and the Post-traumatic Growth Inventory (PTGI).

- ***Personal Information Form***: There are 17 questions in this section. The first 10 questions are aimed at determining socio-demographic characteristics (e.g: age, gender, education level, job, habits, presence of any chronic illness, etc.). The remaining questions are in the form of yes, no or multiple-choice answers (e.g: have you been diagnosed with coronavirus (yes, no), which of the following can you say about your health in general (good, bad), has the pandemic affected your mental health (yes, no), are you worried/anxious about any changes in your health status (yes, no),

- ***Post-traumatic Growth Inventory*** (***PTGI):*** The scale developed by Tedeschi and Calhoun,1996): The Turkish version by Dürü (2006) consists of 21 six-point Likert type (0-5) items and a 5-factor structure. The scale has no reverse-scored items. The total score varies between 0 and 105, and the higher the score, the higher the post-traumatic growth level. The scale has three sub-dimensions: Changes in Self-Perception (CiSP), A Changed Philosophy of Life (ACPoL), and Changes in Interpersonal Relationships (CiIR). In the reliability analysis, the internal consistencies of the scale were calculated as follows: α = 0.88 for CiSP, α = 0.78 for ACPoL, α = 0.77 for CiIR, and α = 0.92 for overall PTGI. In this study, they were calculated as follows: α = 0.93 for CiSP, α = 0.88 for ACPoL, α = 0.83 for CiIR, and α = 0.95 for overall PTGI. In the literature, if the alpha is between $0.00 \leq \alpha < 0.40$ the scale is considered unreliable, if between $0.40 \leq \alpha \leq 0.60$ reliability is considered low, if between $0.60 \leq \alpha 0.80$ the scale is considered quite reliable, and if between $0.80 \leq \alpha \leq 1.00$ the scale is considered highly reliable (Kalayci, 2005). Based on this, the scale used in this study can be considered highly reliable.

2.4. Assessment of Data

The obtained data were analyzed with the SPSS-22 software. Numbers and percentages were used in statistical analyses. Histograms were used to determine conformity to the normal distribution, skewness and kurtosis values were examined, and Kolmogorov-Smirnov analyses were performed. Independent samples t-test, One-Way ANOVA test, Mann-Whitney U test, and Kruskal Wallis test were performed on the correlations between socio-demographic characteristics and the scores obtained from overall PTGI and its sub-dimensions. Mann-Whitney U and Duncan tests were used to test the group differences. Finally, the statistical significance was set at $p<0.05$.

3. RESULTS

The average age of the participants was 31.61±11.05 (min-max: 19-76). 67.0% reported living in a nuclear family, 1.9% in a single-parent family, 13.2% alone, and the rest (17.9%) in an extended family. 17% reported that they smoked, 4.7% reported that they smoked + used alcohol, 75.5% reported that they did neither, and 2.8% reported that they had previously had an addiction. 16% stated that they had a chronic disease. 11.3% reported living alone, 82.1% with their families, and 6.6% with relatives or friends (Table 1).

Table 1. The characteristics of the participants

N = 106			
Variable	**Characteristics**	n	**%**
Age	35 and under	77	72.6
	36 and above	29	27.4
Gender	Women	62	58.5
	Men	44	41.5
Marital Status	Married	47	44.3
	Single / widowed	59	55.7
Montly Income	Low	28	26.4
	Medium	68	64.2
	High	10	9.4
Educational level	Primary school (8 years)	14	13.2
	Secondary school (12 years)	20	18.9
	University	72	67.9
Having children	Yes	43	40.6
	No	63	59.4
Working status	Yes	75	70.8
	No	31	29.2
Place of residence	Province	62	58.5
	District	28	26.4
	Village	16	15.1
Who does he / she live with?	Alone	12	11.3
	With his / her family	87	82.1
	With relatives or friends	7	6.6

As seen in Table 2, 92.5% stated that their health was generally good. However, 59.4% stated that they were concerned that their health might be negatively affected. Of those who had contracted COVID-19, 81.1% stated that their mental health deteriorated and 64.2% stated that their physical health was impaired. 37.7% stated that they did not know how they contracted the disease, and 58.5% treated COVID-19 at home. The participants' average length of hospital stay due to COVID-19 was calculated as 4.33 ± 6.69 days (Min-max: 0-30 days) (Table 2).

Table 2. The Situations of Participants during the Pandemic

N = 106			
Variable	**Characteristics**	**n**	**%**
Anxiety that health status will change	Yes	63	59.4
	No	43	40.6
The idea that mental health is affected by the pandemic	Yes	86	81.1
	No	20	18.9
The idea that their physical health has been affected by the pandemic	Yes	68	64.2
	No	38	35.8
How he caught COVID-19	During travelling	1	0.9
	After an event they had attended	1	0.9
	From their workplace	29	27.4
	Does not know	40	37.7
	From a family member/someone they live with	17	16.0
	Other	18	17.0
How COVID-19 treatment works	Intensive care treatment only	2	1.9
	Intensive care+hospitalization treatment	2	1.9
	Hospitalization treatment	22	20.8
	Home quarantine	62	58.5
	Other	18	17.0
Who have supported them during this process	Their family	31	29.2
	Their family and friends	15	14.2
	Their family, friends, and healthcare personnel	53	50.0
	No one	7	6.6
The status of continuing their job/profession after treatment	Yes	66	70.2
	No	28	29.8

As seen in Table 3, 41.5% reported avoiding crowds, 39.6% avoiding public transportation, and 50.9% a decline in their interpersonal relationships after the outbreak of the pandemic. Of the participants, 45.3% stated that their habit of storing food and cleaning materials did not change, 34% stated that the frequency they visited health institutions did not change, 48.1% reported no change in their sleeping habits, 40.6% reported no change in their social media usage habits, 37.7% stated that they did not have any difficulty focusing on their goals, 39.6% stated that their belief in the effect of modern medicine did not change, and 36.8% stated that their trust in public institutions remained unchanged. Moreover, 33.0% reported an increase in their frequency of handwashing, 50% reported a significant increase in their usage of masks and gloves outside, 39.6% reported an increase in their health-related anxiety, 44.3% reported an increase in symptoms that bring to mind COVID-19, 48.1% reported an increase in their healthy eating habits, 45.3% reported an increase in their habit of following the news, and 50.9% stated that they started to question the meaning of life more often (Table 3). Participants' total and sub-dimension scores for PTGI are close to the mean value of the minimum maximum scores (Table 4).

Table 3. Participants' attitudes and behavior during the current pandemic.

N = 106					
Characteristics	**1 n (%)**	**2 n (%)**	**3 n (%)**	4 **n (%)**	**5 n (%)**
Being in a crowded place	36 (34.0)	44 (41.5)	17 (16.0)	6 (5.7)	3 (2.8)
Preferring public transportation	42 (39.6)	33 (31.1)	28 (26.4)	1 (0.9)	2 (1.9)
Storing food and cleaning supplies	2 (1.9)	10 (9.4)	48 (45.3)	38 (35.8)	8 (7.5)
Washing hands frequently	2 (1.9)	3 (2.8)	14 (13.2)	52 (49.1)	35 (33.0)
Wearing a mask or gloves when going out	4 (3.8)	2 (1.9)	7 (6.6)	40 (37.7)	53 (50.0)
Going to health institutions	14 (13.2)	32 (30.2)	36 (34.0)	18 (17.0)	6 (5.7)
Health concerns	2 (1.9)	5 (4.7)	32 (30.2)	42 (39.6)	25 (23.6)
Doubts regarding disease symptoms	1 (0.9)	9 (8.5)	25 (23.6)	47 (44.3)	24 (22.6)
Having a healthy diet	4 (3.8)	7 (6.6)	32 (30.2)	51 (48.1)	12 (11.3)
Trouble in sleeping	4 (3.8)	11 (10.4)	51 (48.1)	32 (30.2)	8 (7.5)
Interpersonal communication	12 (11.3)	54 (50.9)	35 (33.0)	4 (3.8)	1 (0.9)
Following the news	6 (5.7)	8 (7.5)	33 (31.1)	48 (45.3)	11 (10.4)
Using social media	2 (1.9)	5 (4.7)	43 (40.6)	39 (36.8)	17 (16.0)
Focusing on their goals	11 (10.4)	35 (33.0)	40 (37.7)	17 (16.0)	3 (2.8)
Questioning the meaning of life	2 (1.9)	5 (4.7)	24 (22.6)	54 (50.9)	21 (19.8)
Believing in the impact of modern medicine	8 (7.5)	18 (17.0)	42 (39.6)	30 (28.3)	8 (7.5)
Trusting the government and its institutions	11 (10.4)	20 (18.9)	39 (36.8)	29 (27.4)	7 (6.6)

1: Decreased significantly, 2: Decreased, 3: No change, 4: Increased, Increased significantly

Table 4. Participants' scores on the posttraumatic growth scale and its subscales

N = 106				
Circumstances/Characteristics	***Changes in Self-Perception***	***A Changed Philosophy of Life***	***Changes in Interpersonal Relationships***	***Post-Traumatic Growth Inventory***
Mean±SD	25.83 ± 11.90	13.32 ± 7.10	9.75 ± 5.80	48.91 ± 23.16
Median	29.00	15.00	10.00	55.50
Min-Max	0.00 - 50.00	0.00 - 30.00	0.00 - 25.00	0.00 - 105.00
%95 CI	23.54 - 28.13	11.95 - 14.68	8.63 - 10.87	44.45 - 53.37
Skewness±SE	-.0628 ± 0.235	-0.394 ± 0.235	0.145 ± 0.235	-0.433 ± 0.235
Kurtosis±SE	-0.651 ± 0.465	-0.599 ± 0.465	-0.470 ± 0.465	-0.601 ± 0.465

The present study is research examined whether the participants' scores from the overall PTGI or its sub-dimensions differed in terms of their sociodemographic characteristics or health status. As a result, it was observed that variables such as age, gender, marital status, income status, parental status, family type, members of the household, place of residence, perceived health status, health-related anxiety, and presence of a chronic disease did not make a difference in the scores ($p > 0.05$). As seen in Table 5, the median value of CiSP scores was obtained to be high for primary school graduates ($p = 0.047$), for unemployed participants ($p = 0.006$), for those who reported that their mental health was affected due to the pandemic ($p = 0.026$), (Table 5). Also, the median

value of ACPoL scores was obtained to be high for those who reported that they had previously had an addiction (p = 0.010), for those who stated that their mental health was affected negatively after the pandemic (p = 0.022). Besides, the mean and standard deviation values of CiIR scores were obtained to be high for those who perceived their income status as low (p = 0.012), for those who stated that their mental health was affected negatively after the pandemic (p = 0.022), and for those who stated that their physical health was impaired after the pandemic (p = 0.012). Finally, the median value of overall PTGI scores was obtained to be high for unemployed participants (p = 0.044), for those who stated that their mental health was affected negatively after the pandemic (p = 0.010).

Table 5. Distribution of Participants' Circumstances/Characteristics According to *Post-Traumatic Growth Inventory* and sub-scales total mean scores

N = 106				
Circumstances/Characteristics	***Changes in Self-Perception***	***A Changed Philosophy of Life***	***Changes in Interpersonal Relationships***	***Post-Traumatic Growth Inventory***
	Median (%95 CI)	**Median (%95 CI)**	**Mean±SD**	**Median (%95 CI)**
Educational level				
Primary school (8 years)	32.50 (26.50-35.92)[a]	16.50 (12.06-18.65)	11.50(8,91-14.36)	59.50 (48.63-67.79)
Secondary school (12 years)	31.00 (23.08-33.81)	15.50 (11.83-18.46)	12.50 (8.64-14.65)	61.50 (44.37-66.12)
University	27.00 (21.17-26.96)[a]	14.00 (10.71-14.12)	9.00 (7.52-10.19)	51.50 (39.79-50.89)
Test value	KW=6.132; ***p*=0. 047**	KW=3.803; *p*=0.149	KW=5,194; *p*=0.075	KW= 5.716; *p*=0.057
Montly Income				
Low	32.00 (24.94-33.91)	15.00 (11.46-17.82)	11.00 (9.76-14.87)	60.00 (46.91-65.86)
Medium	27.00 (20.74-26.66)	14.50 (10.77-14.07)	10.00 (7.30-9.81)	52.00 (39.17-50.20)
High	30.50 (25.86-34.73)	15.50 (12.34-19.05)	11.00 (6.78-14.61)	59.50 (45.91-67.48)
Test value	KW=5.411;*p*=0.067	KW=2.481; *p*=0.289	KW=6.617; ***p*=0.037**	KW=5.819; *p*=0.055
Working status				
Yes	26.00 (21.12-26.82)	14.00 (11.18-14.73)	10.00 (7.76-10.47)	49.00 (40.43-51.67)
No	33.00 (26.92-33.78)	15.00 (12.21-16.16)	13.00 (9.31-13.27)	58.00 (49.11-62.56)
Test value	U=770.500; ***p*=0.006**	U=1069.000; *p*=0.515	U=871.50;***p*=0.043**	U=872.500; ***p*=0.044**
Having bad habits				
Only smoking	31.00 (22.17-32.49)	16.50 (11.33-18.44)[a]	10.50 (7.21-12.56)	61.00 (41.51-62.71)
Smoking + alcoholism combined	18.00 (10.32-3.27)	0.00 (-2.67-10.27)[b]	9.00 (2.98-12.21)	27 .00 (18.32-38.07)
None	29.00 (23.46-29.00)	15.00 (12.03-15.06)[a]	10.00 (8.62-11.32)	55.50 (44.45-55.07)
Had a bad habit, quitted it	26.00 (-3.17-45.84)	10.00 (-8.87-36.20)[b]	7.00 (-4.53-17.86)	47.00 (-9.32-92.65)
Test value	KW=4.404; *p*=0.111	KW=9.176; ***p*=0.010**	KW=1.205; *p*=0.547	KW=5.035; *p*=0.081
Thinking that their mental health is affected by the pandemic				
Yes	31.00 (24.81-29.59)	15.00 (12.75-15.61)	11.00 (9.26-11.68)	57.00 (47.25-56.49)
No	24.00 (13.63-26.26)	9.50 (5.90-13.29)	7.00 (4.02-9.27)	41.50 (24.00-48.39)
Test value	U=584.500; ***p*=0.026**	U=576.000; ***p*=0.022**	U=522.00; ***p*=0.006**	U=540.500; ***p*= 0.010**
Thinking that their physical health is affected by the pandemic				
Yes	30.00 (24.08-29.88)	15.00 (12.38-15.82)	11.00 (9.44-12.17)	57.00 (46.33-57.46)
No	28.00 (19.96-27.60)	12.50 (9.62-14.21)	7.50 (6.00-9.75)	49.00 (36.07-51.07)
Test value	U=1079.500; *p*=0.161	U=1075.500; *p*=0.153	U=914.00; ***p*=0.013**	U=1020.500; *p*=0.074
Having anxiety / concern over the fact that their health status will change				
Yes	29.00 (24.35-29.61)	15.00 (12.46-15.66)	10.00 (9.06-11.72)	56.00 (46.43-56.45)
No	29.00 (19.94-28.38)	14.00 (9.75-14.70)	10.00 (6.82-10.80)	51.00 (36.86-53.54)
Test value	U=1217.50; *p*=0.378	U=1204.00; *p*=0.332)	U=1152.50; *p*=0.193	U=1215.50; *p*=0.371

[a, b] indicates the groups, in which the differences were observed

4.DISCUSSION

This pandemic has been a real trauma for all humanity. Trauma is defined as extraordinary incidents that can happen to a person, have various effects on people, and threaten the physical well-being and even life (İnci & Boztepe, 2013). "So, is there a post-traumatic growth, and does that which does not kill us make us stronger?" The present study aims to determine whether the trauma caused by the COVID-19 pandemic has had any positive effects on people. Linley and Joseph (2004) have developed a theory on this subject. They state that even though some dimensions of post-traumatic growth can be seen right after the event, growth should be considered as a process that takes months or even years (Shaw et al., 2004). Dürü, who conducted the first study on the subject in our country, stated that voluntary confrontation, excessive physical arousal and voluntary dissociation from the event are important for posttraumatic growth (Dürü, 2006).

It was observed that of the participants, 17% reported smoking and 4.7% reported both smoking and using alcohol. COVID-19 is a disease that primarily affects the lungs, however, it is reported that the prevalence of smokers among hospitalized COVID-19 patients is lower than the prevalence of smokers in the general population in a region. Therefore, epidemiological data indicate the need to question smoking as a risk factor in terms of developing COVID-19 pneumonia (Polverino, 2020; F. Zhou et al., 2020).

Of the participants 16% reported having a chronic disease. Some studies reported no clear association between the presence of chronic disease and COVID-19 (Lippi & Plebani, 2020; Zhang et al., 2020), whereas some other studies did (Guan et al., 2020; Onder, Rezza, & Brusaferro, 2020; Z. Wu & McGoogan, 2020). On the other hand, although people of all ages and genders are susceptible to COVID-19, it has been reported that elderly people with underlying chronic diseases are more susceptible to serious illness from COVID-19 (Shen et al., 2020).

In this study, 81.1% of those who had contracted COVID-19 stated that their mental health deteriorated and 64.2% stated that their physical health was impaired. Furthermore, 59.6% stated that they were still concerned about their health. Bostan et al. stated that the physical health of patients diagnosed with COVID-19 was negatively affected (Bostan et al., 2020). COVID-19 can cause permanent damage to patients: even two months after recovery, complaints such as burning sensation in the lungs and dry cough have been reported, and ground-glass opacity can be seen on computed tomography (CT) imaging of the lungs (Aslan, 2020a ve 2020b; SağlıkBakanlığı, 2020). It is known that pandemics/epidemics cause traumatic effects and increase the level of anxiety and stress among people (Bandelow & Michaelis, 2015; W. Wu et al., 2020). In a study by Kardaş and Tanhan to evaluate post-earthquake trauma levels of students, 47.5% reported a low level of post-traumatic stress, 35.5% a moderate level of post-traumatic stress, and 17% a high level of post-traumatic stress (Kardaş & Tanhan, 2018). In a study conducted with Australian participants, the participants stated that they were concerned about their mental health due to COVID-19. Also, the authors stated that this situation was determinative of positive or negative post-traumatic effects (J. Shakespeare-Finch et al., 2020).

The results show that, 58.5% of the participants reported having treated COVID-19 at home. Moreover, the participants' average length of hospital stay due to COVID-19 was 4.33 days. It has been reported that 80% of COVID-19 patients develop mild symptoms (COVID & Team, 2020).

The median value of overall PTGI scores was obtained to be high for unemployed participants, for those who stated that their mental health was affected negatively after the pandemic, and for those who reported they were concerned about their health. A study conducted in China concluded that having a high education level, being male, having a high level of financial income,

and having religious beliefs were the factors that made a difference in post-traumatic growth (J. Guo, Fu, Xing, Qu, & Wang, 2017). In the study conducted by Feingold and colleagues, PTGI was found at a similar level as in this study, and they explained that the participants increased in the dimensions of valuing life more, improvement in relationships and personal power (Feingold et al., 2020). This result is consistent with the findings in the literature stating that in order for post-traumatic growth to occur, the individual must go through difficult life experiences and be affected by them (Bleich, Gelkopf, & Solomon, 2003; Butler et al., 2005; Özcan & Arslan, 2020; Tedeschi & Calhoun, 2004).

The median value of CiSP scores was obtained to be high for primary school graduates, for unemployed participants, for those who reported that their mental health was affected due to the pandemic, and for those who reported they were concerned about their health. Similarly, in Karataş's study, significant differences were found between the participants' scores from the post-traumatic growth inventory and its sub-dimensions and their education levels (Karataş, 2020). The mean and standard deviation values of CiIR scores were obtained to be high for those who perceived their income status as low and for those who stated that their mental and physical health was affected negatively after the pandemic. It has been stated in the literature that general functionality, perceived social support, the quality of life, optimism, hope, and perception of new opportunities are predisposing factors for post-traumatic growth (Martin, Byrnes, McGarry, Rea, & Wood, 2017; X. Zhou & Wu, 2016). Karataş found that those who stated an increase in health-related concerns, suspicions about symptoms, and efforts for healthy nutrition had higher post-traumatic growth levels than those who did not (Karataş, 2020). People who are tired of the challenging and crowded living conditions brought about by globalization and the fatigue caused by these perhaps desire life to slow down. In his "The Burnout Society" (2015), South Korean cultural theorist Byung-Chul Han argues that the dangers of today arise not from the negativity of the enemy but from the excess of positivities expressed as overperformance, overproduction, and overcommunication.

Those who reported an increase in their frequency of visiting health institutions, who reported increased health-related anxiety, who reported an increase in their habit of following the news, and those with increased trust in public institutions obtained higher scores from PTGI. Visiting health institutions may have led to increased interaction with health professionals about this disease. Also, increased health-related anxiety may have driven the participants to learn more about the pandemic. Besides, the participants stated that their trust in public institutions did not change after the pandemic, which may have helped them maintain their psychological well-being. Similarly, it has been stated in the literature that people's trust in public institutions has increased after the COVID-19 pandemic (Karataş, 2020). Other studies have also reported that perceived social support increases as the level of traumatic stress increases. This result is also consistent with the findings of many studies showings that perceived social support is associated with post-traumatic stress. It is emphasized that receiving social support positively affects the way an individual copes with trauma and even leads to post-traumatic growth (Calhoun, Cann, & Tedeschi, 2010; Calhoun & Tedeschi, 2006). In addition, some studies have observed some positive changes in human behaviors during the COVID-19 pandemic. It has been reported that after the pandemic, the sky is bluer, there are fewer traffic accidents, crime rates have fallen, and some other infectious disease rates have dropped (Schilling et al., 2020). It has also been reported that public health services are given priority especially in this process due to the risk of transmission. Besides, it has been reported that children approached the measures of "handwashing, mask-wearing, and social distancing" in a collaborative manner during the pandemic. Self-awareness levels of individuals have also been reported to increase in this process (Nelson & Lee-Winn, 2020). In this context, in the course of COVID-19, people are now questioning their priorities and have realized even more deeply how important it is to protect their lives and loved ones. People are now more aware that nothing is more important than their health, and this increased awareness will be effective in maintaining healthy habits.

5.CONCLUSION AND RECOMMENDATIONS

The literature suggests that following adversity, people often engage in a variety of positive processes, such as seeking improved relationships, forming a changed view of self, and even making changes in their philosophy of life (Tedeschi & Calhoun 2004; Linley, & Joseph Linley, 2011; Linley & Joseph 2004). Posttraumatic growth can measure the changes experienced by individuals after a stressful or traumatic event based on their self-reports. In such retrospective measures, called perceived or self-reported, people are expected to be able to recall past events (Gower, 2022). In this study, since the COVID-19 pandemic, which was experienced very recently, was questioned and the pandemic is still in effect, it was assumed that these self-reports would be appropriate.

The majority of the respondents stated that their mental health had deteriorated. Although this is important, PTGI scores were found to be almost half of the minimum maximum score range. This result suggests that the participants emerged from this process almost at a good (strong) level.
In this study, although some sociodemographic characteristics were found not to make a difference on PTGI and sub-dimension scores (age range, gender, marital status, having children, family type, with whom they currently live, where they currently live, perception of general health status, concern that health status will deteriorate, having any chronic disease), It was also observed that there were variables (such as level of education, opinion on whether monthly income is sufficient or not, whether working or not, smoking and alcohol habits) that made a difference.

The study also determined that the importance given to “preventive public health measures” increased after the pandemic. It is recommended to conduct further research in the context of different cultures and different samples.

Acknowledgements

Conflict of Interest: No conflict of interest was declared by the authors.

Funding: The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Ethics approval: The study was approved by a university ethics board (approval number: 28.09.2020/95674917-108.99-E.33264).

REFERENCES

Aktürk, Z., & Acemoğlu, H. (2012). Reliability and validity in medical research. Dicle Medical Journal, 39(2), 316-319.

Aslan, R. (2020a). How does COVID-19 affect physiology and psychology? Journal Ayrıntı , 8(88).

Aslan, R. (2020b). Epidemics, Pandemics and Covid-19. Journal Ayrıntı, 8(85).

Barzilay, R., Moore, T. M., Greenberg, D. M., DiDomenico, G. E., Brown, L. A., White, L. K., ... & Gur, R. E. (2020). Resilience, COVID-19-related stress, anxiety and depression during the pandemic in a large population enriched for healthcare providers. Translational psychiatry, 10(1), 1-8.

Bandelow, B., & Michaelis, S. (2015). Epidemiology of anxiety disorders in the 21st century. Dialogues in clinical neuroscience, 17(3), 327.

Bleich, A., Gelkopf, M., & Solomon, Z. (2003). Exposure to terrorism, stress-related mental health symptoms, and coping behaviors among a nationally representative sample in Israel. JAMA, 290(5), 612-620.

Bostan, S., Erdem, R., Öztürk, Y. E., Kılıç, T., & Yılmaz, A. (2020). The Effect of COVID-19 Pandemic on the Turkish Society. Electronic Journal of General Medicine, 17(6).

Butler, L. D., Blasey, C. M., Garlan, R. W., McCaslin, S. E., Azarow, J., Chen, X.-H., . . . Hastings, T. A. (2005). Posttraumatic growth following the terrorist attacks of September 11, 2001: Cognitive, coping, and trauma symptom predictors in an internet convenience sample. Traumatology, 11(4), 247-267.

Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2010). The posttraumatic growth model: Sociocultural considerations. In T. Weiss & R. Berger (Eds.), Posttraumatic growth and culturally competent practice: Lessons learned from around the globe (pp. 1–14). John Wiley & Sons Inc.

Calhoun, L.G., & Tedeschi, R.G. (Eds.). (1999). Facilitating Posttraumatic Growth: A Clinician's Guide (1st ed.). Routledge. https://doi.org/10.4324/9781410602268

Calhoun, L.G., & Tedeschi, R.G. (2004). Author's Response: "The Foundations of Posttraumatic Growth: New Considerations". Psychological Inquiry, 15(1), 93–102. https://doi.org/10.1207/s15327965pli1501_03

Calhoun, L. G., & Tedeschi, R. (2006). The foundations of posttraumatic growth: An expanded framework. In L. G. Calhoun, & R. G. Tedeschi (Eds), Handbook of posttraumatic growth: Research and practice (pp. 1-23). Mahwah, NJ: Erlbaum.

Chua, S. E., Cheung, V., McAlonan, G. M., Cheung, C., Wong, J. W., Cheung, E. P., . . . Chu, C. M. (2004). Stress and psychological impact on SARS patients during the outbreak. The Canadian Journal of Psychiatry, 49(6), 385-390.

COVID, T.C., & Team, R. (2020). Severe Outcomes Among Patients with Coronavirus Disease 2019 (COVID-19)-United States, February 12-March 16, 2020. MMWR Morb Mortal Wkly Rep, 69(12), 343-346.

Gower, T., Pham, J., Jouriles, E. N., Rosenfield, D., & Bowen, H. J. (2022). Cognitive biases in perceptions of posttraumatic growth: A systematic review and meta-analysis. Clinical Psychology Review, 94, 102159.

Davidson, H. (2020). First COVID-19 case happened in November, China government records show-report. The Guardian, 13.

Duman, N. (2019). TPosttraumatic growth and development. International Journal of Afro-Eurasian Studies, 4(7), 178-184.

Dürü, Ç. (2006). Examining posttraumatic stress symptoms and posttraumatic growth in terms of various variables: a model proposal (Master Thesis), Hacettepe University, Hacettepe University Institute of Social Sciences Department of Psychology Division of Clinical Psychology Retrieved from file:///C:/Users/%C3%87a%C4%9Fla%20Yi%C4%9Fitba%C5%9F/Desktop/159594.pdf

Doorn, A., K., Békés, V., Luo, X., Prout, T. A., & Hoffman, L. (2022). Therapists' resilience and posttraumatic growth during the COVID-19 pandemic. Psychological Trauma: Theory, Research, Practice, and Policy, 14(S1), S165–S173. https://doi.org/10.1037/tra0001097

Elçi, Ö. (2004). The level of social support, stress level and coping strategies predicting posttraumatic growth and burnout in families of children with autism. Unpublished Master's Thesis, Middle East Technical University Institute of Social Sciences, Ankara.

Feingold, J. H., Hurtado, A., Feder, A., Peccoralo, L., Southwick, S. M., Ripp, J., & Pietrzak, R. H. (2022). Posttraumatic growth among health care workers on the frontlines of the COVID-19 pandemic. Journal of affective disorders, 296, 35-40.

Griffin G. Defining trauma and a trauma-informed COVID-19 response. Psychol Trauma. 2020 12(1):279-280. doi: 10.1037/tra0000828. Epub 2020 Jun 18. PMID: 32551754.

Guan, W.-j., Ni, Z.-y., Hu, Y., Liang, W.-h., Ou, C.-q., He, J.-x., . . . Hui, D. S. (2020). Clinical characteristics of coronavirus disease 2019 in China. New England Journal of Medicine, 382(18), 1708-1720.

Guo, J., Fu, M., Xing, J., Qu, Z., & Wang, X. (2017). Coping style and posttraumatic growth among adult survivors 8 years after the 2008 Wenchuan earthquake in China. Personality and Individual Differences, 111, 31-36.

Guo, Y.-J., Chen, C.-H., Lu, M.-L., Tan, H. K.-L., Lee, H.-W., & Wang, T.-N. (2004). Posttraumatic stress disorder among professional and non-professional rescuers involved in an earthquake in Taiwan. Psychiatry research, 127(1-2), 35-41.

İnci, F., & Boztepe, H. (2013). Posttraumatic growth: does pain that doesn't kill make you stronger? Journal of Psychiatric Nursing, 4(2), 80-84.

Kalayci, S. (2005). Multivariate statistical techniques with SPSS application. Ankara: Asil Yayin Dagitim.

Kanat, B. B., & Özpolat, A. G. Y. (2016). Post-traumatic growth in cancer patients. Turkish Journal of Clinics and Laboratory, 7(4), 106-110.

Karanci, N. A., & Acarturk. (2005). Post-traumatic growth among Marmara earthquake survivors involved in disaster preparedness as volunteers. Traumatology, 11(4), 307-323.

Karataş, Z. (2020). Social Impacts of the COVID-19 Pandemic, Change and Empowerment. Social Impacts of COVID-19 Pandemic, Change and Empowerment.

Kardaş, F., & Tanhan, F. (2018). Investigation of posttraumatic stress, posttraumatic growth and hopelessness levels of university students who experienced the Van earthquake. Yüzüncü Yıl University Journal of Faculty of Education, 15(1), 1-36.

Lippi, G., & Plebani, M. (2020). Laboratory abnormalities in patients with COVID-2019 infection. Clinical Chemistry and Laboratory Medicine (CCLM), 58(7), 1131-1134.

Linley, P.A. & Joseph, S. (2011). Meaning in Life and Posttraumatic Growth, Journal of Loss and Trauma, 16:2, 150-159, DOI: 10.1080/15325024.2010.519287

Mak, I. W. C., Chu, C. M., Pan, P. C., Yiu, M. G. C., & Chan, V. L. (2009). Long-term psychiatric morbidities among SARS survivors. General hospital psychiatry, 31(4), 318-326.

Martin, L., Byrnes, M., McGarry, S., Rea, S., & Wood, F. (2017). Posttraumatic growth after burn in adults: An integrative literature review. Burns, 43(3), 459-470.
McKibbin, W. J., & Fernando, R. (2020). The global macroeconomic impacts of COVID-19: Seven scenarios.

McMichael, T. M. (2020). COVID-19 in a long-term care facility—King County, Washington, February 27–March 9, 2020. MMWR. Morbidity and Mortality Weekly Report, 69.

Nelson, S. M., & Lee-Winn, A. E. (2020). The mental turmoil of hospital nurses in the COVID-19 pandemic. Psychological Trauma: Theory, Research, Practice, and Policy.

Nenova, M., DuHamel, K., Zemon, V., Rini, C., & Redd, W. H. (2013). Posttraumatic growth, social support, and social constraint in hematopoietic stem cell transplant survivors. Psycho-oncology, 22(1), 195-202.

Onder, G., Rezza, G., & Brusaferro, S. (2020). Case-fatality rate and characteristics of patients dying in relation to COVID-19 in Italy. Jama, 323(18), 1775-1776.

Özcan, N. A., & Arslan, R. (2020). The mediating role of social support and spirituality in the relationship between posttraumatic stress and posttraumatic growth. Electronic Journal of Social Sciences, 19(73).

Özçetin, Y. S. Ü., & Hiçdurmaz, D. (2017). Posttraumatic growth and psychological resilience in cancer experience. Current Approaches in Psychiatry, 9(4), 388-397.

Prout, T. A., Zilcha-Mano, S., Aafjes-van Doorn, K., Békés, V., Christman-Cohen, I., Whistler, K., ... & Di Giuseppe, M. (2020). Identifying predictors of psychological distress during COVID-19: a machine learning approach. Frontiers in Psychology, 11.

Polverino, F. (2020). Cigarette Smoking and COVID-19: A Complex Interaction. Am J Respir Crit Care Med, 202(3), 471-472. doi: 10.1164/rccm.202005-1646LE

Ran, L., Wang, W., Ai, M., Kong, Y., Chen, J., & Kuang, L. (2020). Psychological resilience, depression, anxiety, and somatization symptoms in response to COVID-19: A study of the general population in China at the peak of its epidemic. Social Science & Medicine, 262.

Sağlık Bakanlığı. (2020). https://covid19.saglik.gov.tr/Eklenti/39229/0/covid-19-haftalik-durum-raporu--43pdf.pdf?_tag1=70F7CD89B8F7191D8FAD3ACF29EF550190C31B61.

Sarısoy, G. (2012). Investigation of the degree of posttraumatic growth and the factors predicting posttraumatic growth in breast cancer patients (Master's thesis). Ankara, Hacettepe University.

Schilling, W., Callery, J., Taylor, W., Mukaka, M., Ekkapongpisit, M., Watson, J., . . . Yuentrakul, P. (2020). Chloroquine/hydroxychloroquine prevention of coronavirus disease (COVID-19) in the healthcare setting; protocol for a randomised, placebo-controlled prophylaxis study (COPCOV). Wellcome Open Research, 5(241), 241.

Shakespeare-Finch, J., Bowen-Salter, H., Cashin, M., Badawi, A., Wells, R., Rosenbaum, S., & Steel, Z. (2020). COVID-19: An Australian Perspective. Journal of Loss and Trauma, 25(8), 662-672.

Shakespeare-Finch, J. E., Smith, S., Gow, K. M., Embelton, G., & Baird, L. (2003). The prevalence of post-traumatic growth in emergency ambulance personnel. Traumatology, 9(1), 58-71.

Shaw, A., Joseph, S., & Linley, P.A. (2005) Religion, spirituality, and posttraumatic growth: a systematic review, Mental Health, Religion & Culture, 8:1, 1-11, DOI: 10.1080/1367467032000157981

Sawhney, C., Singh, Y., Jain, K., Sawhney, R., & Trikha, A. (2020). Trauma care and COVID-19 pandemic. Journal of Anaesthesiology, Clinical Pharmacology, 36(Suppl 1), 115.

Shen, K., Yang, Y., Wang, T., Zhao, D., Jiang, Y., Jin, R., . . . Lin, L. (2020). Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement. World journal of pediatrics, 1-9.

Şirin, H., & Özkan, S. (2020). COVID-19 Epidemiology in the World and Turkey. Journal of Otorhinolaryngology and Head and Neck Surgery. 6-13.

Tedeschi, R. G., & Calhoun, L. G. (2004). " Posttraumatic growth: Conceptual foundations and empirical evidence". Psychological inquiry, 15(1), 1-18.

Wu, W., Zhang, Y., Wang, P., Zhang, L., Wang, G., Lei, G., . . . Xie, S. (2020). Psychological stress of medical staffs during outbreak of COVID-19 and adjustment strategy. Journal of Medical Virology.

Wu, Z., & McGoogan, J. M. (2020). Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72 314 cases from the Chinese Center for Disease Control and Prevention. Jama, 323(13), 1239-1242.

Zhang, J.-j., Dong, X., Cao, Y.-y., Yuan, Y.-d., Yang, Y.-b., Yan, Y.-q., . . . Gao, Y.-d. (2020). Clinical characteristics of 140 patients infected with SARS-CoV-2 in Wuhan, China. Allergy.

Zhou, F., Yu, T., Du, R., Fan, G., Liu, Y., Liu, Z., . . . Gu, X. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. The Lancet.

Zhou, X., & Wu, X. (2016). The relationship between rumination, posttraumatic stress disorder, and posttraumatic growth among Chinese adolescents after earthquake: A longitudinal study. Journal of Affective Disorders, 193, 242-248.