Journal of Adult Development (2022) 29:228–239
https://doi.org/10.1007/s10804-022-09398-4

# Coping and Post-traumatic Growth Among COVID-19 Patients: A Qualitative Study

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Accepted: 13 February 2022 / Published online: 15 March 2022


## Abstract

Pandemic diseases have caused dramatic changes in people's lives throughout history. Today, the COVID-19 virus spreads rapidly and affects human beings around the globe. This study aimed to discover the coping strategies and post-traumatic growth (PTG) experiences of persons who were infected by the COVID-19 virus using the qualitative research method. The research involved 17 individuals, nine of whom were female. All had been diagnosed with COVID-19. Face-to-face and online interviews were conducted with participants. In the analysis of the data, the thematic analysis method was performed by developing themes and sub-themes. The created themes include coping strategies, existential growth, lessons learned from disease, new opportunities, and social growth. These themes indicated positive changes in the lives of persons who were infected by the COVID-19 virus after the COVID-19 disease. Findings and implications for the practice were discussed.

**Keywords** COVID-19 disease · Coping · Post-traumatic growth · Persons who were infected by the COVID-19 virus · Phenomenology

The highly contagious and pathogenic coronavirus pandemic 2019 (COVID-19) has spread exponentially, causing a pandemic within only 9 months. Therefore, the World Health Organization (WHO, 2020) has declared the COVID-19 pandemic a public health emergency of international concern. The worldwide number of people who have been diagnosed is above 416.6 million and the number of deaths is over 5.8 million (by February 2022) since the first case was formally identified (WHO, 2022a). In parallel with this increase, the number of diagnosed people has reached 12.051.852 including 88.312 deaths to date (by February 2022) in Turkey (Turkish Ministry of National Health, 2022). It is obvious that so far, the COVID-19 pandemic has created a major threat to both the physical and mental health of millions of people (Lee & Neimeyer, 2020; Şimşir et al., 2021a).

Patients diagnosed with COVID-19 face multiple challenges during the illness. The patients commonly suffer from fever, cough, dryness, and fatigue (Huang et al., 2020). Other symptoms may also involve loss of smell and taste, shortness of breath, persistent cough, diarrhea, delirium, skipped a meal, abdominal pain, chest pain, and hoarse voice (Menni et al., 2020; Qi et al., 2020). We still do not have sufficient information about the possible damages the COVID-19 may have on the human body. Additionally, COVID-19-infected patients are prone to mental health issues (Ma et al., 2020). As it is well known, widespread contagious diseases tend to increase the levels of uncertainty, fear, stress, and anxiety that can destroy coping strategies and result in trauma (Chew et al., 2020). Recent researches showed that rates of overall mental health problems, psychiatric morbidity, and chronic fatigue were prevalent among COVID-19 patients (Aliakbari Dehkordi et al., 2020; Guo et al., 2020; Ma et al., 2020; Qi et al., 2020). A meta-analysis study by Deng et al. (2021) among COVID-19 patients demonstrated that the prevalence of depression was 45%, the prevalence of anxiety was 47%, and the pooled prevalence of sleep disturbances was 34%. Furthermore, hospital treatment and the use of mechanical ventilation in intensive care units (ICUs) may

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increase the risk of developing acute psychiatric symptoms such as depression, anxiety, and post-traumatic stress disorder (PTSD) (Hatch et al., 2020; Sun et al., 2021a). The COVID-19 patients with ongoing mental health issues have a higher risk of mortality two years after ICU discharge (Hatch et al., 2020). Accordingly, coping strategies and the well-being of COVID-19 patients should not be neglected. In this regard, we aimed to discover coping styles and PTG experiences of persons who were infected by the COVID-19 virus in our study.

## Literature Review

Despite the adverse effects of pandemics, a considerable number of COVID-19 patients may also develop positive changes after recovery that refer to the term of post-traumatic growth (PTG) in the psychology literature. Post-traumatic growth theory stresses the experience of positive changes that emerge after coping with stressful life crises (Tedeschi & Calhoun, 1995, 2004). PTG implies not only returning to a pre-existing state of equilibrium but also establishing a perspective that reassesses life positively (Tamiolaki Muchacka-Cymerman, 2020; Tedeschi & Calhoun, 2004). The manifestation of PTG involves a greater appreciation of life, more positive interpersonal relationships, a greater sense of personal power, shifting priorities, and a deeper existential and spiritual life (Tedeschi & Calhoun, 2004).

In the literature, the number of people who reported PTG following traumatic events many outnumbers those who reported mental health issues (Tedeschi & Calhoun, 2004). Previous studies indicated individuals who faced different life challenges such as war and immigration (Şimşir et al., 2021a), spinal cord injury (Chun & Lee, 2008), earthquake (Taku et al., 2015), motor vehicle accidents (Nishi et al., 2010), conflict (Simsir & Dilmac, 2018), bereavement (Michael & Cooper, 2013), cancer illness (Schroevers et al., 2010), and heart disease (Sheikh, 2004) experience PTG.

Similarly, PTG has been reported among COVID-19 patients in recent studies (e.g., Prieto-Ursúa & Jódar, 2020a, 2020b; Sun et al., 2021b; Tomaszek & Muchacka-Cymerman, 2020). However, the number of these studies is very limited. Therefore, Tamiolaki and Kalaitzaki (2020) recommended examining PTG after the COVID-19 pandemic to guide policymakers and practitioners in developing tailor-made solutions and strategies in traumatic events.

PTG is not a direct outcome of a distressing experience, as it often occurs after coping and struggling against that experience of the traumatic event (Tedeschi & Calhoun, 1996, 2004). Calhoun and Tedeschi (2014) claimed that a person's coping skill before stress or trauma is possibly connected to their growth process. In particular, in case of insufficient coping behavior, a person may not be able to develop a growth process. However, if a person possesses strong coping mechanisms, he or she may smoothly flourish after exposing stress or trauma.

Coping refers to the particular behavioral and mental attempts that people use to manage, endure, reduce, or limit the level of stressful experiences so that they could deal with personal and social challenges (Folkman & Lazarus, 1980). People develop various coping strategies such as problem-focused and emotion-focused (Lazarus & Folkman, 1984), and religious behaviors (Pargament, 2001) to cope with challenges. Although there is no specific formula or stable process for managing life to improve well-being, existing research has examined an array of coping strategies in the COVID-19 pandemic (e.g., Burton et al., 2020; Kalaitzaki, 2020; Zhou et al., 2020). For example, Zhou et al. (2020) found a positive correlation between PTG with the forward-focused coping strategy and trauma-focused coping strategy. The forward-focused coping approach was also protective against depression. Additionally, family and social support (Sun et al., 2021b; Zhou et al., 2020), spirituality, and religiosity (Prieto-Ursúa & Jódar, 2020a, 2020b) facilitate the PTG process during a pandemic.

To briefly mention the positive psychological outcomes of a pandemic, researchers commonly emphasized social growth as an outcome among hospitalized COVID-19 patients (Sun et al., 2021a), the general population (Prieto-Ursúa & Jódar, 2020a, 2020b), and nurses (Chen et al., 2021). Lau et al. (2006), also, reported social growth during the SARS outbreak among Hong Kong residents. Furthermore, other positive changes such as appreciating life, improved ability to resist stress (Sun et al., 2021a), lifestyle changes, and mental health awareness (Lau et al., 2006), character growth (Gander & Wagner, 2020), personal strength, new possibilities, and spiritual change (Kalaitzaki, 2020; Prieto-Ursúa & Jódar, 2020a, 2020b) were observed among individuals during a pandemic.

As noted above, the theoretical framework and empirical evidence support that COVID-19 patients use various coping methods and experience PTG. Most researches, however, have not been able to reveal these experiences in depth. The reason why these indicators remained superficial was that these studies were mainly based on quantitative methods in which deep personal experiences have not been thoroughly revealed. However, it is pivotal to discover these issues in detail for mental health professionals to suggest treatment methods for such people. Therefore, this study aims to deeply discover the coping strategies and PTG experiences of persons who were infected by the COVID-19 virus in Turkey using the interview technique. In this context, the following two questions were asked:

(i) How did persons who were infected by the COVID-19 virus cope with highly stressful circumstances?

(ii) What are the PTG experiences of persons who were infected by the COVID-19 virus following the disease?

## Method

### Research Design

The present research followed a phenomenological approach—one of the qualitative research designs—in order to obtain a better understanding of persons'—who were infected by the COVID-19 virus—coping strategies and PTG experiences. In phenomenological analysis, researchers try to discover and explain people's lived experiences, perceptions, and meanings (Langdridge, 2007; Patton, 2002, 2005). Rather than identifying the causes of personal growth, we use open-ended research questions to gain a deeper understanding of the phenomenon (Langdridge, 2007). The phenomenological research design includes clarifying and justifying the subject matter, conceptualizing and framing experiences, choosing procedures, and determining the number of participants (Larsen & Adu, 2021). In this research, the phenomenon was PTG, and we investigated experiences and coping strategies of persons who were infected by the COVID-19 virus regarding PTG.

### Participants

The research involved 17 individuals, nine of whom were female, and had been diagnosed with COVID-19. Participants were interviewed months after their recovery from COVID-19 (Ranging from 2 to 7 months). In the current research, a maximum diversity-sampling approach that aims to select a wide variety of cases was used (Patton, 2005). People from all ages, professions or genders were affected detrimentally from this virus, whether their conditions were severe or mild (e.g., Şimşir et al., 2021a, 2021b; Yan et al., 2021). In this vein, while including individuals in the research, we attempted to assure heterogeneity. Participants varied in terms of time elapsed from disease, medical status, and hospitalization/lockdown status, as well as demographic variables such as gender, age, and residency (diverse cities of Turkey). Furthermore, the participants were all Muslims. Table 1 shows information about the participants.

### Inclusion and Exclusion Criteria of Participants

Inclusion criteria for research participants were as follows: (i) they must be adults over 18 years of age; (ii) they must have been infected with COVID-19 and at least 2 months have passed since their recovery; (iii) they must have felt the disease's physical symptoms. Additionally, individuals diagnosed with any mental disorder before or during the COVID-19 pandemic were excluded from the research.

**Table 1** Demographical ınformation of the study group

| Participants | Gender | Age | Profession | Medical condition | Treatment setting | Time elapsed after COVID-19 (months) |
|---|---|---|---|---|---|---|
| P1 | Male | 58 | Academician | Moderate | Home treatment | 4 |
| P2 | Male | 26 | Chemist | Mild | Home treatment | 2 |
| P3 | Female | 29 | Teacher | Moderate | Home treatment | 2 |
| P4 | Female | 53 | Academician | Severe | Hospital treatment | 5 |
| P5 | Female | 38 | Officer | Severe | Home treatment | 3 |
| P6 | Male | 55 | Engineer | Severe | Hospital treatment | 3 |
| P7 | Female | 20 | College student | Moderate | Home treatment | 4 |
| P8 | Female | 60 | Retired teacher | Severe | Hospital treatment | 2 |
| P9 | Male | 35 | Freelancer | Moderate | Home treatment | 2 |
| P10 | Male | 32 | Freelancer | Moderate | Home treatment | 3 |
| P11 | Male | 60 | Journalist | Severe | Hospital treatment | 2 |
| P12 | Female | 80 | Housewife | Severe | Hospital treatment | 2 |
| P13 | Female | 33 | Academician | Moderate | Hospital treatment | 2 |
| P14 | Male | 23 | College student | Mild | Home treatment | 7 |
| P15 | Female | 38 | Psychological counselor | Severe | Home treatment | 2.5 |
| P16 | Female | 27 | Psychological counselor | Severe | Hospital treatment | 2 |
| P17 | Male | 22 | College student | Moderate | Home treatment | 3 |

## Semi-structured Interview

In the data collection stage, a semi-structured interview technique was used. Interviewing is a common qualitative research approach that relies on direct quotes from people about their experiences (Patton, 2005). The first move was to perform a systematic review in order to formulate research questions, followed by a literature search on PTG. Three experts evaluated the questions, two of whom were trauma counselors and the other was a qualitative research methodology academic, and we rearranged the questions based on their suggestions. Finally, for the pilot study, we interviewed with two people who were infected by the COVID-19 virus and finalized the questions based on their answers. The interview questions are listed below, and probing questions were asked during the interviews to elicit their opinions.

### The Interview Questions

1. What was the outcome of the COVID-19 process? Could you please explain your symptoms and experiences during your illness? What was the state of your health at the time?
2. What challenges did you encounter? How did you overcome these challenges when you were ill? What exactly did you do?
3. What have you learned from COVID-19? What did this disease teach you?
4. What kind of changes in your self-perception did you notice (if any)?
5. What kind of changes did you find in your perspective on life, if any?
6. What sort of opportunities did COVID-19 offer you?
7. What kind of changes occurred regarding your views about spirituality/religiosity (if any)?
8. What kind of changes occurred in your interpersonal relationships and behavior toward people (if any)?

## Data Collection

An ethical committee proposal was submitted to the University Ethical Committee before data collection, and it was approved with the commission date and the number of 2021/125. For ethical approval, the consents of the participants were obtained before data were gathered. Face-to-face (7 people) and online (10 people) interviews were conducted in accordance with safety protocols, and all of the authors who had at least three years of experience in qualitative research methods collected the data. Participants were scheduled with their available slots for face-to-face interviews. Online video conferencing (Zoom, Google Meet, Whatsapp, etc.…) was used for the interviews. A tape recorder was used for both interviews with the permission of the participants, and then voice-to-text applications were employed before analyzing the data. Participants were told what "PTG" meant before the interviews. Confidentiality—removing any information regarding to participants' identities—(Berg, 2001) was conveyed. The length of the interviews ranged from 26 and 43 min.

## Data Analysis

We used thematic analysis in the data analysis process based on this methodology. Thematic Analysis (TA) is a form of data analysis that involves systematically identifying and organizing relevant patterns (Braun & Clarke, 2006, 2012). Most theoretical structures allow the use of TA, which provides flexibility and accessibility (Braun & Clarke, 2006; Terry et al., 2017). The first move was to build themes together, later, creating the sub-themes. We determined common themes and sub-themes based on our agreement. Deductive and predominantly inductive methods were combined in data analysis. A deductive approach is a theory-testing process, whereas an inductive approach is a theory-building process that seeks to reach generalizations (Hyde, 2000). Furthermore, the inductive approach is preferred when there is a lack of study or hypothesis while existing of current research results or hypotheses (Elo & Kyngäs, 2008). According to Patton (2002), a researcher may use both an inductive and deductive approach to analysis, beginning with an inductive approach and then moving to a more deductive approach when analyzing results. Furthermore, Armat et al. (2018) pointed out that labeling only inductive or deductive approaches can lead to an erroneous assumption. Thus, researchers may use either deductive or inductive approaches instead of solely applying one. In the current study deductive elements were themes, and the inductive elements were sub-themes.

## Establishment of Trustworthiness

We applied several techniques to improve the study's trustworthiness. Participants' verbal consent was obtained and confidentiality which was described as removing any information regarding participants' identities (Berg, 2001) was ensured (Berg, 2001). In the first step, each author coded transcripts separately and then convened three online meetings to reach a consensus on the themes and sub-themes. Some sub-themes evolved as a result of all authors' and literature's input, and the final versions of themes and sub-themes were created at the end of the third meeting. We then used member-checking for credibility by asking participants through e-mails and phone calls to what extent the results represent their views (e.g., Başkale, 2016; Patton, 2002). We were able to contact 20% of the participants and asked whether themes and sub-themes represented their views or

not. Two academicians—experts in qualitative research and trauma counseling—reviewed data with findings and provided recommendations for the peer debriefing. Finally, the characteristics of participants and sampling methods were detailed for transferability.

## Findings

In this section, we categorized the experiences of participants with the disease's negative physical and psychological effects, as well as post-traumatic development, into five themes and 30 sub-themes (see Table 2). Each theme was thoroughly explained, with sample participant statements provided below.

### Theme 1: Coping Strategies

During COVID-19, participants with more physical symptoms were subjected to more psychological stressors. People who were treated in hospitals, particularly those who had a chronic illness or lost family members during the process, learned more coping strategies to resolve COVID-19. *Religious coping* was the most common coping strategy/style among participants, and they mostly prayed to God during the illness. For example, P6 (M, 55 years) said, "I prayed a lot and believed that God is the source of all good and evil. I took my medications and prayed for healing at all times, and I tried holding my spirits up."

Some COVID-19 participants initially struggled to recognize their disease, but as time passed, they came to terms with it and began to use positive thinking to cope with stressors. Regarding the sub-theme *acceptance* and *positive thinking*, P9 (M, 35 years) emphasized that "On the third and fifth day of the illness, which were the worst days of COVID-19, I did not become pessimistic and thought that I will get better. I accepted this illness and tried to think positively. I tried to keep my mind and body stronger." Participants maintained their "The social support" mechanism during the COVID-19 process of dealing with the illness. Many participants said that they received social support from their significant others, which helped them feel better. P1 (M, 58 years), for example, said, "My wife has always been really supportive of me. Every day, my son gave me an injection, and my mother and father called me every day."

Similar to other patients, participants who had stayed at home for a long time in quarantine and engaged in activities to cope with these difficult circumstances to relieve tension and we categorized this sub-theme as *paying attention to activities*. "I had a horrible headache and couldn't pay attention to anything. I tried to keep myself busy with something. I attempted to engage in my hobbies, such as playing the violin." P7 (F, 20 years) talked about this sub-theme. In addition, some participants used s*elf-care strategies* to relax physically and mentally. P5 (F, 38 years) reported that "I realized that we must take care of ourselves. I tried to feed myself and take supplements regularly. I took a break and sunbathe with my kids on the balcony."

The sub-themes *awareness of the universality* of disease and *trying to be powerful* emerged from a few participants' narratives. P11 (M, 60 years) said "I conclude that this disease is a test, not only for me but for all humans. Since the start of the pandemic, I believe this test has been valid for all humans. Another disease would also emerge in the future." Regarding the sub-theme called *trying to be powerful*, P14 (M, 23 years) stated that "This was an extraordinary situation and I felt that I had to be strong. I felt that I must advise my family. My father was very anxious. In this situation, I tried to calm down my family. There was a challenge and I felt that I am the one who had to be strong; I took responsibility as a leader in my family."

### Theme 2: Existential Growth

Some participants had serious symptoms and had fear of death. During this time, they were isolated in the hospitals or at their houses, and they tackled the challenges of the disease from various angles. Most of them challenged their

**Table 2** Themes and sub-themes given by participants

| Theme | Sub-themes |
|---|---|
| I. Coping strategies | Religious coping; acceptance and positive thinking; social support; paying attention to activities; self-care; awareness of universality of disease; trying to be powerful |
| II. Existential growth | Faith, spirituality, and religiosity; awareness of death; requestioning of life; ıncrease in appreciation of life; gratitude |
| III. Lessons learned from disease | Importance of human values; importance of health and hygiene; importance of moment; distress tolerance; importance of freedom |
| IV. New opportunities | personal strength; motivation for work; increase in family time; free time and resting time; decrease in workaholism; positive outlook |
| V. Social growth | Priority for significant others; importance of family and close relationships; caring for family; attachment to significant others; tolerance for others; revising social relationships; sense of sharing |

own lives and sought an answer to the issue of what was the purpose of their life. They reflected on their own lives and considered how they would rebuild their lives after they had recovered. *Faith, spirituality, and religiosity* were prominent sub-themes in this theme. Participants with faith in God grew spiritually. For example, P15 (F, 38 years) said, "I felt like I wasn't really close to God and that I wasn't praying enough, which has bothered me. I am attempting to pray more from now on."

Furthermore, most of participants reported that their sense of death was raised after people died of the COVID-19 around the world. P1 (M, 58 years), in response to the sub-theme *awareness of death,* said, "We as humans are very close to death and may face it every second. Not only did I lose my significant other, but so did our relatives, and we realized that life isn't as important as we thought. Every second may be our last minute. Every day, we learn something from someone's death."

P16 (F, 27 years) said for the sub-theme *requestioning of life*, "I work really hard. I had a chance to take a break due to this disease. I would say that working is beneficial, but spending long hours is harmful. During this time, I had the opportunity to reflect these thoughts on my life. What exactly am I doing? I re-examined my position." Some participants pointed out that they appreciated life more than ever after the recovery process. We named this sub-theme *increase in appreciation of life*. For example, P12 (F, 80 years) reported "I learned that life was beautiful and before this illness, I thought that I was old enough for new things. However, now life seems more precious to live." Besides, some participants highlighted the increase in gratitude. P3 (F, 29 years) stated under the sub-theme *gratitude* that "My understanding of what I have increased. I have been more thankful for small but significant things like walking down the street without a mask on, gathering with my friends and family, and sharing a cup of coffee in a café. I always missed these events and realized how important it is to be grateful for the little things."

## Theme 3: Lessons Learned from the Disease

The majority of the participants remarked that they had learned some lessons from their distressing experiences. The most common category under this theme has been the sub-theme stated as the *importance of human values*. Rather than pointing out materialist opinions, participants stressed human values such as friendship, family, sharing, patience, appreciation, and spirituality. Regarding this sub-theme, P5 (F, 38 years) said that "People said they had a car but were not able to drive, or they had money but couldn't spend it. I realized that material objects had no value for me. Simultaneously, I discovered that my friends, family, and unity were more valuable than money."

*The importance of health and hygiene*, which we described as a sub-theme under theme 3, was frequently mentioned by participants. In this sub-theme, P2 (M, 26 years) reported "Even though I was not treated at the hospital, I learned the importance of health and hygiene during this process. I was at home and doing well compared to others." Additionally, other participants discussed the *importance of the moment* when they were sick. P4 (F, 53 years) said that "I learned the importance of living in the moment. Perhaps the future will never arrive. Therefore, we must cherish the present, and my illness taught me the value of doing so. The present moment is the most important. The past is gone, and the future has yet to arrive. This is a wake-up call for me to get up and live right now."

Infected with COVID-19 has been perceived as a traumatic event by the participants resulting in losing significant others or worrying for their families. However, after recovery, *distressing tolerance* was increased and some participants learned to leave dealing with small details. P17 (M, 22 years) reported that "I had some problems at the university especially in some lessons and thought they were all trouble. When I faced COVID-19, I learned that the past experiences were not real problems." On the other hand, P10 (M, 32 years) emphasized that this illness taught him the *importance of freedom* by saying "It taught me that the freedom could not be found anywhere. I had to stay in a room for ten days and learned that freedom is a very precious. I had my computer, access to the internet and I even stared out the window but I was bored so much! I could not speak to anyone and go out and this taught me the importance of freedom."

## Theme 4: New Opportunities

All participants implied that the COVID-19 pandemic was a stressful situation that easily triggered a crisis, but that it also provided them new opportunities. Under this theme, the most popular sub-theme was *personal strength*. Most of the participants stressed "The feeling of being stronger than before." Regarding this sub-theme, P13 (F, 33 years) said that "This is one of the most stressful experiences that I have ever faced in my life; I have never experienced such circumstance before. I became mature and stronger after recovery."

Some participants were inspired to work harder than they had previously to combat COVID-19's negative effects. This sub-theme was named *motivation for work*, and P4 (F, 53 years) shared her thoughts on it by saying, "I still have problems, but I try to see the bright side of this illness. To avoid thinking about the disease and becoming nervous, I began to work frequently, and the number of my scientific studies were increased. Of course, working during those periods was difficult for me, but I pushed myself hard to work in order to avoid feeling trapped by the illness. As

people, we do not dwell on the past; we must look toward the future."

The participants in this study mentioned that they remained at home for 2 weeks during the quarantine, allowing them to spend time with their families and relax. P3 (F, 29 years) responded to the sub-theme *increase in family time* by saying, "I spent my time with my children. Because I could spend longer time with my children and I had more free time. When I was a little kid we would come together with my family members once the electricity went out. Likewise, we have more time to spend with our families because there are a few things to do during this pandemic."

P17 (M, 22 years) commented on the sub-theme *free time and resting time*, saying, "Because I work so hard in general, I had an opportunity to rest during lockdown." *The decrease in workaholism* was another sub-theme that emerged as a common topic among participants. P15 (F, 38 years) said in response to this sub-theme "That raised my awareness of my perfectionist side and workaholism, which harmed my well-being. In addition, at home, my job never ends. It was a kind of rumination, and I was constantly thinking about my job and other things. These feelings faded after COVID-19, and I stopped bringing my work home."

Of the participants, P8 (F, 60 years) emphasized that her view of the world has changed positively—the sub-theme of *positive outlook*—after the illness by saying that "I changed my views and in sum renewed myself. Especially after my 60 s, my worldview has changed. For instance, when I worry about something I just try to forget it and think positively. Life is beautiful and these ages are the best for life. We are living in heaven in this world."

## Theme 5: Social Growth

According to the participants, those who spent a long time in quarantine away from social relationships experienced social growth. Furthermore, they were able to spend more time with their families than before. They tried to cope with the difficult circumstances with their family members during the quarantine period. One of their fears was the possibility of losing a family member due to this disease. As a result, participants were more concerned about the well-being of their significant others than about their own well-being. *Priority for significant others* was found to be the most prominent sub-theme in this theme, and P9 (M, 35 years) reflected:

> That disease quickly affected others, and I was particularly worried about my mother and father because they were both old and had chronic illnesses. Because of COVID-19, I was deeply afraid of losing them. My wife has been infected with COVID-19. I was concerned for her safety. I have a two-month-old son and was concerned about who would look after him if my wife was taken to a hospital. I was unafraid of myself, but the possibility of losing my loved ones made me nervous. I always believed that it's easier to look after others.

During this time, some of the participants felt alone, while others received social support from their families. They stressed how important family, social relationships, and communication are to them. *The importance of family and close relationships* was one of the sub-themes that participants highlighted. P3 (F, 29 years) reported that:

> I started to give more importance to humans and my family, I was afraid of losing them. As a result, they became even more valuable to me now than they were previously. We have realized how important it is to be together and how difficult it is to be on your own.

During quarantine, participants tried to care for their families more than before and met their needs. Related to the sub-theme called *caring for family*, P2 (M, 26 years) told that "I tried to be more polite and sensitive to people. I helped my mom and tried to do whatever she wants and needs."

Some participants, on the other hand, reported that they were more attached to their significant others than before, and we labeled this sub-theme *attachment to significant others*. P7 (F, 20 years) talked about this sub-theme, "We as humans are more connected to our significant others. People you share a house with have become more relevant. With these people, you're still at home. If there is another pandemic, we will have to come together and survive together."

Several participants stated that their tolerance for others had increased, and these statements were grouped under the sub-theme *tolerance for others*. P15 (F, 38 years) noted concerning this theme:

> I became more forgiving for people after the COVID-19. I was angry and nervous at first, and I even had a fight with my father. In general, I am an anxious and nervous individual. However, since my illness, I have tried to be more tolerant and choose gentle words toward others. Many times I am unable to succeed, but I keep trying to follow up with behavior.

Other sub-themes emerged under the social growth theme, such as *revising social relationships* and a *sense of sharing*. Regarding the *revising social relationships* sub-theme, P13 (F, 33 years) stressed that she received social support from people that she never would have assumed:

> During this period, people I never expected them to be helpful for me, supported and be with me. On the other hand, the people I needed social support from never showed up. However, I did not intend to criticize them because people with COVID-19 seemed like bugaboo. On the contrary, people I never guessed as

close enough, brought meals and called me every day. I learned not to be prejudiced against people after this illness.

P6 (M, 55 years) shared his thoughts on the sub-theme *sense of sharing* by saying, "My feelings about sharing have increased. When I saw people who have lost their jobs have hurt me, you say that sickness has taught us to share. We share because of our religious values, but after COVID-19, we learned to share even more."

## Discussion

Although a growing body of literature has given considerable attention to PTG studies focusing on the COVID-19 patients (e.g., Chen et al., 2021; Okoli et al., 2021; Vazquez et al., 2021), there are still a limited number of qualitative studies (Sun et al., 2021b). Hence, this study investigated PTG and coping experiences of persons who were infected by the COVID-19 virus using the phenomenological design. We summarized our findings in five themes including coping strategies, existential growth, lessons learned from disease, new opportunities, and social growth. These themes supported the PTG theory (Tedeschi & Calhoun, 2004). PTG theory consists of the following dimensions: Appreciation of life, personal strength, new opportunities, relating to others, and spiritual change (Tedeschi & Calhoun, 1996). The "existential growth" theme in our research includes spiritual change and appreciation of life dimensions in PTG theory. Our "new opportunities" theme includes the new possibilities and personal power dimension in PTG theory. Our "social growth" theme is about relating to other dimensions in PTG theory. Additionally, our themes include participants' coping strategies and lessons learned from the disease. These findings might broaden the scope of the PTG theory.

Participants stated that they used the following coping styles to eliminate stress caused by the disease: religious coping, acceptance and positive thinking, social support, paying attention to activities, self-care, awareness of the universality of disease, and trying to be powerful. The COVID-19 pandemic has posed an extraordinary challenge for the entire humanity. Both active and avoidant coping strategies contribute to the psychological health of individuals affected by pandemic disasters (Main et al., 2011). Human beings have faced many deadly diseases throughout history. The Ebola is one of them. The Ebola disease was predominantly seen in African countries such as Sudan, Gabon, Congo, Uganda, and has not spread as much as COVID-19. The case fatality rate of Ebola is around 50% (WHO, 2022b). As of February 11, 2022, the case fatality rate of the COVID-19 is around 1.41% (WHO, 2022a). The Ebola disease is more deadly than COVID-19. Therefore, there are great differences between the disease experiences of the patients. Unlike our research, Ebola patients used methods such as trying to relax by making drugs from various plants as a strategy to cope with the disease (Schwerdtle et al., 2017). However, there are similar coping strategies in studies on Ebola patients and our research on COVID-19 patients. Researchers reported that during the Ebola pandemic, people prayed fervently and used religious coping (Matua & Wal, 2015; Schwerdtle et al., 2017). In another study on Ebola, researchers emphasized that family, friends, and prayer support helped individuals' to overcome difficulties (Rabelo et al., 2016). The literature also showed that social support can help sustain psychosocial well-being during the COVID-19 pandemic (Minahan et al., 2021). Researchers reported that older participants used coping methods to address the stress of COVID-19, such as staying busy, seeking social support, and having a positive mindset (Fuller & Huseth-Zosel, 2021). These coping styles are consistent with the approaches expressed by the participants of our study. We assumed that the coping styles used by the participants were effective and significant for the PTG process. It is increasingly recognized that personal and interpersonal resources (e.g., coping strategies, social support, communication) had a positive relationship with PTG (Palacio et al., 2020).

PTG refers to the positive changes developed through difficult living conditions in the lives of individuals (Tedeschi et al., 2018). One of the difficult living conditions is a pandemic disease (Bridgland et al., 2021; Sanchez-Gomez et al., 2021; Yan et al., 2021). All persons infected by serious symptoms because of COVID-19 must be treated and isolated in a hospital. They are not permitted to accept visits from family and friends. After discharge, they must be quarantined at home for at least 14 days. This severely limits their freedom and disturbs all of their prior lifestyle routines. As a result, COVID-19 is a distressing and traumatic event for many patients and survivors (Yan et al., 2021). Bridgland et al. (2021) also revealed that COVID-19 is a traumatic stressor event capable of triggering PTSD-like reactions and worsening other linked mental health disorders (e.g., depression, anxiety, psychosocial functioning, etc.). In this vein, it is not surprising that persons who were infected by the COVID-19 virus also develop PTG. Likewise, researchers reported PTG experiences of individuals after outbreaks such as SARS and Ebola (Cheng et al., 2006; Mok et al., 2005; Rabelo et al., 2016). Similarly, we reported that individuals experienced PTG after the COVID-19 outbreak. We categorized the post-traumatic growth experiences of individuals after COVID-19 as follows: existential growth, lessons learned from disease, new opportunities, and social growth.

A systematic review study revealed that positive religious coping, religious openness, readiness to face existential

questions, religious participation, and inner religiosity were associated with PTG (Shaw et al., 2005). It has been stated that COVID-19 would also cause spiritual and existential transformations among individuals (Musapur et al., 2020). Additionally, another study highlighted the effect of religiosity and spirituality on PTG during COVID-19 (Prieto-Ursúa & Jódar, 2020a, 2020b). Participants in our study likewise experienced existential growth. In a review, the importance of values was reported during the COVID-19, which can create a sense of commitment in humans (Wolf et al., 2020). In our study, participants emphasized the importance of human values as the lessons learned from the disease.

When we examined studies on PTG after various challenging life events, we traced similar categories. Zhang et al. (2015) outlined the PTG categories as communication with others, personal strength, a new style and philosophy in life, appreciation of it, and spiritual elevation. In another study, PTG experiences were categorized as belief in a higher power, appreciation for life, changing priorities, religious and spiritual change, personal power, and compassion for others (Shakespeare-Finch et al., 2014). During the COVID-19 pandemic, researchers reported that people have high levels of personal relationships, strengthen emotional power and resilience, gain deeper spiritual connection, and a sense of gratitude for life (Arnout & Al-Sufyani, 2021). The researchers categorized the PTG experience after COVID-19 into themes such as interpersonal relations, new possibilities, personal power, spiritual conversion, appreciation of life, and pollution reduction (Maftei & Holman, 2020). Moreover, Stallard et al. (2021) categorized the PTG experiences of carers of children in the period of COVID-19 as relating to others, discovering and embracing new possibilities, and spiritual growth. In the end, these findings are compatible with the themes and sub-themes in our study.

From the qualitative data, we revealed previously undiscovered implications for COVID-19 patients' experience. First, acceptance and positive thinking, paying attention to activities, self-care, awareness of the universality of disease, and trying to be powerful are exceptional coping strategies unreported in the existing literature. Understanding such mechanisms offers a fundamental comprehension of the experiences of COVID-19 patients, as well as evidence and information for mental health practitioners to consider when planning treatments to improve their clients' coping. Second, while the most research in the literature addressing the impact of the COVID-19 pandemic on mental health focuses on negative impacts (Dilmaç et al., 2021; Şimşir et al., 2021b), our study focused on positive outcomes. PTG experiences of COVID-19 patients may both support their adaptation to the damage in their lives by the pandemic and improve their future live (Sun et al., 2021b). Third, participants' COVID-19 disease experiences not only led to positive developments in their social relationships, personal strength, and existential notions but also improvements in health awareness. This awareness may have a favorable impact on participants' behavior on important subjects like being vaccinated, following hygiene rules, and wearing masks.

Ultimately, our studies discovered that all participants experienced PTG in various dimensions and degrees. In the statements of participants, there were no considerable differences observed in the overall PTG levels compared to their severity of COVID-19 symptoms. However, when we examined the themes that arose from the study, certain personal differences stand out. Patients with severe COVID-19 prioritized themes of existential growth and new opportunities the most, whereas those with moderate and mild diseases stressed themes of social growth and lessons learned from disease the most. This might be because patients with COVID-19 encounter mortality more closely, their underlying existing schemas to be affected more profoundly. Yet, PTG is a multidimensional term (Tedeschi & Calhoun, 2004), and mixed-method and longitudinal studies are required to understand how illness severity influences the PTG experience of COVID-19 patients.

## Limitations and Future Studies

This study has various limitations. First, all the participants were from Turkey and were interviewed after at least 2 months following their illness. Therefore, the findings do not reflect the findings of all individuals with COVID-19, and different participants (participants from different backgrounds) may provide alternative perspectives on PTG. Second, since qualitative analysis was used in this study, it reflects the views of a small number of people. Therefore, we did not identify subgroups according to factors such as the time during and after the disease did not compare the difference in PTG. Third, as data collecting instrument, we employed a semi-structured interview with open-ended questions in this study. However, there is a risk that the researchers' questions throughout the data collection process would direct the participants' answers. Therefore, while evaluating research findings, this limitation should be considered. Fourth, persons who were infected by the COVID-19 virus continue to experience PTG, and due to the scope of this study, they were not included. Future studies should consider different samples and have multi-stage designs to better understand PTG in persons who were infected by the COVID-19 virus. Fifth, this study involved the opinions of people from different professions, however, this study investigated the PTG of neither healthcare workers nor groups witnessing COVID-19 deaths. We think that future studies may be diversified by including these groups.

## Conclusion

This study has provided a comprehensive and in-depth understanding of the coping and PTG experiences of individuals with COVID-19 through a phenomenological approach. We have revealed how people cope with COVID-19 and their possible PTG experiences. However, further research requires to determine thoroughly how COVID-19 affects the experience of PTG. Also, the mechanism of PTG in individuals with COVID-19 and the contribution of each factor should continue to be investigated in detail.

**Author Contributions** Author order reflects the weight of these contributions.

**Funding** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Data Availability** The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

## Declarations

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical Approval** The study was in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consent was obtained from all individual participants included in the study.

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