POSTTRAUMATIC GROWTH, POSTTRAUMATIC STRESS, MEANING IN LIFE, DEATH ANXIETY, INTOLERANCE OF UNCERTAINTY AND LOSS IN THE MIDST OF THE COVID-19 PANDEMIC

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ABSTRACT

POSTTRAUMATIC GROWTH, POSTTRAUMATIC STRESS, MEANING IN LIFE, DEATH ANXIETY, INTOLERANCE OF UNCERTAINTY AND LOSS IN THE MIDST OF THE COVID-19 PANDEMIC

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The COVID-19 pandemic is a unique and fruitful research context to examine existential themes such as death, uncertainty, meaning in life, and loss. Even though the COVID-19 pandemic is known to be associated with variety of mental health problems, there are relatively few research conducted to understand how some relevant existential themes and individual factors may relate to posttraumatic growth during the pandemic. Therefore, it was hypothesized that posttraumatic stress, meaning in life, death anxiety, intolerance of uncertainty, and loss predict posttraumatic growth during the pandemic. 420 participants (133 male and 287 female) between the ages of 18-65 (M= 42.09, SD= 14.196) participated in the study. Socio-Demographic Information Form, Impact of Event Scale-Revised (IES-R), Meaning in Life Questionnaire (MLQ), Turkish Death Anxiety Scale (TDAS), Intolerance of Uncertainty Scale Short Form (IU-12) and Posttraumatic Growth Inventory (PTGI) were filled by the participants. Results revealed that all main variables were correlating with each other significantly and positively with a few exceptions on subscales. Regression analysis showed that posttraumatic stress, existing meaning in life, search for meaning in life, and loss predict posttraumatic growth. Findings are evaluated and discussed in the light of current literature. Lastly,

limitations, strengths, implications, and recommendations for further research are presented.

ÖZ

COVID-19 SALGINI DÖNEMİNDE TRAVMA SONRASI BÜYÜME,
TRAVMA SONRASI STRES, YAŞAMIN ANLAMI, ÖLÜM KAYGISI,
BELİRSİZLİĞE TAHAMMÜLSÜZLÜK VE KAYIP

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COVID-19 salgını ölüm, yaşamın anlamı, belirsizlik ve kayıp gibi varoluşsal kavramların incelenmesi açısından özel ve verimli bir araştırma bağlamı sunmaktadır. Her ne kadar COVID-19 salgını çeşitli ruhsal sağlık sorunlarıyla ilişkili bulunmuşsa da literatürde salgınla ilişkisi olabilecek olan varoluşsal ve bireysel faktörlerin travma sonrası büyüme ile ilişkisini inceleyen oldukça az sayıda çalışma bulunmaktadır. Buradan yola çıkılarak travma sonrası stres, yaşamın anlamı, ölüm kaygısı, belirsizliğe tahammülsüzlük ve kayıp değişkenlerinin travma sonrası büyümeyi yordayacağı öngörülmüştür. 18-65 yaş aralığında olan 420 katılımcı (133 erkek ve 287 kadın) çalışmaya katılmıştır (M= 42.09, SD= 14.196). Sosyo-Demografik Bilgi Formu, Olayların Etkisi Ölçeği (Gözden Geçirilmiş Form), Yaşamın Anlamı Ölçeği, Türkçe Ölüm Kaygısı Ölçeği, Belirsizliğe Tahammülsüzlük Ölçeği (BTÖ-12) ve Travma Sonrası Büyüme Envanteri (TSBE) katılımcılar tarafından doldurulmuştur. Sonuçlar, birkaç alt ölçek dışında tüm ana değişkenlerin birbiriyle pozitif ve anlamlı ilişki gösterdiği yönündedir. Regresyon analizi sonucuna göre travma sonrası stres, var olan anlam, bulunmaya çalışılan anlam ve kayıp değişkenleri travma sonrası büyümeyi yordamaktadır. Mevcut bulgular literatür eşliğinde değerlendirilmiştir. Son olarak, çalışmanın kısıtlamaları, klinik uygulamalar ve ilerideki çalışmalar için öneriler sunulmuştur.

Anahtar Kelimeler: Travma sonrası büyüme, travma sonrası stres, yaşamın anlamı, belirsizliğe tahammülsüzlük, ölüm kaygısı, kayıp

To My Beloved Ones

ACKNOWLEDGEMENTS

Writing a thesis during the pandemic requires discipline, effort, emotional stability, motivation, tolerance of uncertainty and persistence. I can admit that the hardest part was motivating myself and dealing with the uncertainty. I learned the importance of collaboration and admitting the need of help. Accepting that I needed help to motivate myself and to guide my thesis was the lesson that got me through my thesis journey. The pandemic was and is hard for me to navigate as my family and I are showing too much effort to protect each other from contracting the virus. Without a doubt, it disrupts our mobility, social relationships, and physical closeness. It also impacted my thesis as it brought many uncertainties, isolation, and lack of guidance. Even though pandemic brought upon many challenges into my life and others' lives, I guess it taught us some new skills, and brought new questions to our minds, pushing us to adapt and hopefully to change for better.

I had the diagnosis of thyroid cancer 20 days before submitting this thesis. I sincerely believe awareness and growth may come out of this experience for me at the end of the day. It may be that some knowledge and insight is easier to reach to and digest when we go through certain experiences, rather than reading or hearing about them. Hopefully, I will be more appreciative of what I have, focus on the moment more rather than time-travelling between past and future, and stop postponing life and joy with conditional statements and excuses. In demanding hardships, recognizing my most valuable resources and strengths was surprisingly easier. Sometimes, the pressure and demanding circumstances may become the sources in which we cope, endure, hurt, heal, and grow.

I thank my family for trying to bear with me in this uncertain pandemic, as I showed no signs of progress in my work, they did their best to motivate me and empathize with me. I want to thank to my boyfriend for his patience and support in this somewhat stressful journey. I am grateful for the people that participated in this study to help me gather data, people who were there to ask how I was, checking how I was doing and for their efforts to motivate me and reassure me that things will work

out. When in doubt or feeling lost, I learned the importance of keeping on pushing despite the presence of frustration. I am grateful to write a thesis about what I personally and professionally care about. I sincerely hope readers will be personally and empirically interested in existential givens and concerns evoked during this pandemic as much as I did.

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ACT	Acceptance and Commitment Therapy
AIDS	Acquired Immunodeficiency Syndrome
CBT	Cognitive Behavioral Therapy
CG	Complicated Grief
COVID-19	Severe Acure Respiratory Syndrome Coronavirus 2
DSM-5	Diagnostic and Statistical Manual of Mental Disorders
ICU	Intensive Care Unit
IES	Impact of Event Scale
IU	Intolerance of Uncertainty
MIL	Meaning in Life
MLQ	Meaning in Life Questionnaire
MMM	Meaning Making Model
OCD	Obsessive Compulsive Disorder
PP 2.0	Existential Positive Psychology
PTD	Posttraumatic Distress
PTG	Posttraumatic Growth
PTGI	Posttraumatic Growth Inventory
PTSD	Posttraumatic Stress Disorder
PTS	Posttraumatic Stress
PTSS	Posttraumatic Stress Symptoms
SARS	Severe Acute Respiratory Syndrome
SPSS	Statistical Package for the Social Sciences
TDAS	Turkish Death Anxiety Scale

CHAPTER 1
INTRODUCTION

1.1 General Introduction

COVID-19 outbreak emerged in the city of Wuhan, Hubei in China in December 2019. In January 2020, the World Health Organization declared the COVID-19 outbreak to be a Public Health Emergency of International Concern, as disease has the risk of spreading to other countries (World Health Organization, 2020). Since then, positive cases and death rates grew exponentially. 1 month later, all 34 regions of China were impacted by the virus and the World Health Organization (WHO) declared the situation as a pandemic on March 11, 2020. After 3 weeks from the first case in China, a lockdown was imposed on Wuhan, followed by other cities. People were obligated to stay home, cease transportation, and isolate (Wang et al., 2020). The rapid and worldwide spread of the virus ceased the healthcare system. Economic shutdown, isolation, restrictions in transportation completely transformed the psychosocial environment in which people live in (Walton, 2020).

Even though COVID-19 cases can be asymptomatic, symptoms include fever, dry cough, sore throat, breathing difficulty, chills, nausea, vomiting, myalgia, diarrhea, and fatigue. Older age and comorbid health issues are risk factors for severity of the disease as well as the prognosis. In severe cases, cardiac failure, respiratory failure, acute respiratory disease, and death are observed (Wang et al., 2020). Currently, there have been 340,543,962 cases of COVID-19 and 5,570,163 deaths globally. In Turkey, there are 11,525,730 confirmed cases and 87,234 deaths cumulatively. At the time of this writing, there are more than 85,000 new cases and around 180 deaths are reported daily in Turkey (World Health Organization, 2022a).

Coronavirus pandemic not only influenced people physically, but it is also found to have detrimental impacts on psychological health of individuals. Pandemics influence people with and without mental illnesses. More specifically, pandemic is associated with psychological issues such as anxiety, depression, panic attacks,

OCD, somatic symptoms, substance use, sleep problems, PTSD, delirium, psychosis, and suicidality (Ho et al., 2020; Rather et al., 2020). Ahmed et al. (2020) suggests that losing a loved one, testing COVID-19 positive, getting hospitalized, being quarantined, and being a medical staff are associated with higher risk of developing anxiety, anger, depression and other associated issues such as loneliness, and stress related symptoms. Eisenbeck et al. (2021) report that young age, being female, low SES, being a student, and having previous psychological diagnosis are also associated with greater psychological distress and problems during COVID-19.

Outbreaks of infective diseases are known to result in many psychological issues on a personal, community, and global level. Study conducted in China from 31st of January to 2nd of February (two weeks into the pandemic) shows that 53.8% of participants rated psychological impact of the pandemic as moderate to severe, 16.5% reported moderate to severe depression symptomatology, 28.8% reported moderate to severe anxiety symptoms, and 8.1% reported moderate to severe stress (Wang et al., 2020). Xiong et al. (2020) share that in a study that gathered data from the general population of China, Spain, Iran, Italy, Turkey, Nepal, Denmark, and US shows high levels of anxiety (6.33-50.9%), depression (14.6%-48.3%), PTSD (7%-53.8%), psychological distress (34.4-38%), and stress (8.1%-81.9%) among general population. Meta-analysis shows that 96.2% of COVID-19 patients reported high levels of PTSS and 29.2% of the patients reported depressive symptoms. Psychiatric patients had reported worsening of symptomatology, whereas healthcare workers and the general public reported worsening of psychological well-being (Vindegaard & Benros, 2020). A study conducted in Turkey on 499 participants in March 2020 shows that 74% of participants regularly watch news about COVID-19, 71% of participants follow COVID-19 positive cases and death rates daily, while 50% of participants claimed that they started to follow the social media accounts of the Ministry of Health. Additionally, almost 50% of participants reported partial to complete sleep disturbance due to anxiety and 63% of the sample claimed to check themselves for COVID-19 symptoms from time to time. These results can be interpreted as disturbance of daily routines and increased anxiety during the COVID-19 pandemic (Çelebi, 2020).

When we consider Spanish Flu, AIDS, SARS, Ebola, and Swine Flu, to date there is no single epidemic that caused such broad and prolonged disruptions into daily lives of people worldwide as much as COVID-19 did. In a sense, there were no solutions or manuals to cope with COVID-19 pandemic (Polizzi et al., 2020). During SARS epidemic, depression, anxiety, PTSS, and PTSD symptoms were observed, which were prominent during and years after the pandemic (Vindegaard & Benros, 2020). Therefore, there is a need of research regarding the current and prolonged influences of the COVID-19 pandemic on populations.

In this study, pandemic is considered to be a traumatic stressor, and it is assumed that people get affected by the pandemic to a variety of extent. As discussed above, COVID-19 pandemic is known to cause serious mental health issues. In this study, while acknowledging the negative impacts of the pandemic, potentially positive changes experienced during the pandemic will also be investigated. This study will examine the potential existential and individual factors (posttraumatic stress, death anxiety, meaning in life, loss, and intolerance of uncertainty) associated with posttraumatic growth (PTG) during the COVID-19 pandemic.

1.2 Posttraumatic Stress

Traumatic experience of the pandemic can disrupt the integrity and congruence one's life has, the satisfaction towards past, hope towards future, while downgrading satisfaction and expectations of life. Psychological trauma can be characterized by intrusive memories, flashbacks, sleep disturbances and nightmares, hypervigilance, hyperarousal, reexperiencing of traumatic event, avoidance from trauma-related stimuli, inability to plan, decrease in daily activity, numbness, negative affect, and guilt (American Psychiatric Association, 2013). In DSM-5, PTSD is defined as "exposure to actual or threatened death, serious injury, or sexual violence" which can involve directly experiencing, witnessing someone else experiencing, learning that traumatic event occurred to a close family member or close friend, and experiencing repeated or extreme exposure to aversive details of the traumatic events. Exposure through TV, electronic media, movies or pictures are not included as a diagnostic factor (American Psychiatric Association, 2013), which can be questioned elsewhere.

However, it is a fact that people received a tremendous amount of aversive knowledge about the spread of the virus, death tolls, symptoms, and cases through electronic channels during the pandemic. The other criteria of life-threatening nature, serious harm, witnessing others getting infected, learning about an acquaintance testing positive, and the extreme and repeated exposure to aversive details are all very relatable in the context of this pandemic.

The current pandemic has an ongoing and fluctuating nature. Thus, it can have both direct and vicarious effects on populations. In the study conducted in June 2021, 45.6% of adults reported IES (Impact of Event Scale) scores above 33, signifying the likely presence of PTSD symptomatology, and 33.4% reported a score over 63 on PTGI (Posttraumatic Growth Inventory), indicating moderate change (Northfield & Johnston, 2021). Another research conducted in the U.S. in 2020 shows that 26% of the general population experienced PTSD or PTSS during the COVID-19 outbreak. Yet, it is expected to increase as the pandemic progresses and persists (Hong et al., 2021). Shevlin et al. (2020) suggest the pandemic to be a major traumatic stressor as nationally representative data from Ireland concludes 17.7% of the normal adult sample to fulfill the diagnostic criteria for PTSD.

Sociodemographic factors associated with PTSS include age, gender, and physical health. Literature suggests that females are more likely to suffer from PTSD compared to males. Some studies show a decreased prevalence of PTSD among older participants (Ditlevsen & Elklit, 2010), which may be partially related to increased resilience and successful aging. Findings also suggest that regardless of age, poor physical health is associated with PTSD symptoms. This is attributed to effect on biological mechanisms on PTSD, unhealthy behavior engagement, and being more vulnerable to trauma due to problems regarding physical health (Sommer et al., 2021). Some studies also suggest that women report more PTSD symptoms in earlier ages, whereas men are more likely to report increased PTSD prevalence in later ages. These differences may be associated with hormonal and biological changes taking place such as adolescence and menopause, life transitions, social roles, and exposure to trauma, which may vary depending on the cultural context as well (Ditlevsen & Elklit, 2010).

Koliouli and Canellopoulos (2021) suggest COVID-19 to be a cultural trauma as it includes disruption of daily lives, potential loss of trust in leaders/institutions, negative attribution in the media, and continuous struggle to determine the meaning regarding what happened and why it happened. In the literature, exposure to pandemic is considered as a major stressful and traumatic event since individuals face a life threat and witness others getting harmed. In addition to that, Kira et al. (2020) propose that COVID-19 is a new type of trauma that has never been conceptually or empirically analyzed. This type of continuous ongoing trauma is proposed to be type III trauma. COVID-19 is concluded to be a mass collective and global traumatic stressor which can both directly and indirectly influence individuals. Additionally, the pandemic is a unique stressor as it has a very complex nature with multiple sources of stressors such as economic issues, contagion, isolation, routine disruption, experiences of loss, social restrictions, unknown future implications, and so on.

The pandemic can be described as an unprecedented stressor to cause massive traumatic response around the globe. It seems that the pandemic is unique for consisting of many physical and psychological stressors with little to no certainty and remedy at hand. Most traumatic events are unpredictable, life threatening, and uncontrollable. The pandemic can be a source of threat upon physical and emotional well-being of individuals (Tunç, 2021). With these being said, COVID-19 can be a fruitful context to explore posttraumatic reactions and posttraumatic growth.

1.3 Posttraumatic Growth

Trauma is often explained as an existential injury since it disrupts the person's needs and goals. Negative life events can shake the value system, reality, and view of self (Tomaszek & Muchacka-Cymerman, 2020). Traumatic experiences can have both negative and positive impacts on well-being (Linley & Joseph, 2004). For the sake of this study, the focus will be primarily on the positive aspect of the current pandemic, known as posttraumatic growth.

The term posttraumatic growth is developed by Tedeschi and Calhoun in 1995 (Tedeschi & Calhoun, 2004). PTG is the positive psychological changes and improved functioning that occur after a highly stressful traumatic experience. This change occurs not because of the trauma itself, but because of the process of engaging, processing, and coming in terms with the traumatic experience (Shakespeare-Finch et al., 2013). Tedeschi and Calhoun (2004) use PTG terminology to refer to highly stressful events and associated positive changes that occur. PTG doesn't refer to illusory experiences or coping mechanisms that are ongoing or an outcome of traumatic experience. Additionally, PTG requires significant threat or shattered assumptions that accompany psychological distress.

There are many old writings and ideas in ancient Hebrews, Greeks, and Christians about the possible positive changes occurring after suffering. Islam, Buddhism, and Hinduism also have teachings in accordance with this idea. Interest in this concept emerged around the 1980s and gained strength after the 1990s (Tedeschi & Calhoun, 2004). The Japanese art "kintsugi" involves artists filling the cracked pottery with gold or silver, which makes the piece even more aesthetic and valuable than the uncracked version. This art form resonates with PTG in a sense that a disadvantage and damage can turn into something better and more valuable (Walton, 2020).

There is a wide array of events that can work as a catalyst for posttraumatic growth. Negative experiences of medical problems (rheumatoid arthritis, multiple sclerosis, cancer, bone marrow transplantation, heart attacks, brain injury, HIV/AIDS), transportation accidents (car, shipping, plane etc.), natural disasters (hurricanes, earthquakes, fires), interpersonal experiences (sexual assault and abuse, combat, being taken as a hostage), and other life experiences (immigration, divorce, bereavement) can be listed as experiences associated with growth. In sum, PTG seems to occur accompanying a variety of experiences for a variety of people (Joseph et al., 2012).

There are important concepts that are related to PTG but are essentially different. They will be explained shortly to posit how they differ from PTG.

Resilience is the ability to go on living life or purposeful life after a hardship. It is defined as bouncing back and returning to one's functionality prior to the adverse event. While resilience is conceptualized as bouncing back, PTG is seen as bouncing forward. In PTG, the event needs to be highly stressful, and a person should experience a change when compared with the pre-trauma state. *Hardiness* is the tendencies toward commitment, control, and challenge as a response given to life events. *Optimism* is the expectation of positive outcomes to events. *Sense of coherence* describes a person who can manage stress by comprehending events, managing them, and finding meaning in doing so.

PTG on the other hand, is going beyond the ability of managing or coping with adversity and moving beyond the pre-trauma state in terms of adaptation. It is a quality of transformation and change. Coping abilities mentioned on other concepts can result in getting less damaged and impacted by a stressful event. Those concepts can be seen as resiliency or as protective factors that alleviate the distress and aid the coping process with the distressing event. On the contrary, struggle with trauma is an essential quality of posttraumatic growth (Tedeschi & Calhoun, 2004).

1.3.1 Model and process of posttraumatic growth. According to the functional-descriptive model proposed by Tedeschi and Calhoun (2004), it is assumed that people develop and rely on certain general beliefs and assumptions about the world named as "assumptive world". These provide individuals with a general understanding, experience, and perception of the world and their place in that world. Major challenges and events can shatter the assumptive world, which may then challenge individuals, their adaptive resources, and challenge the assumptive world. Growth doesn't happen as a direct result of trauma per se, but because of the struggle with the new reality the trauma posits. However, the event is expected to be challenging enough to provide a window for change. Psychologically seismic event can shake and shatter the assumptive world of individuals, which used to guide them through decision making, understanding, and meaning making. This idea is also supported by the "shattered world assumption" theory posited by Janoff-Bulman. The challenged assumptions can be about benevolence, predictability, safety, and controllability of the world. When challenged, individuals can question their identity,

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their safety, and their future, which is likely to create psychological distress (Tedeschi & Calhoun, 2004). Growth may include changes in thoughts, emotions, life narrative, and wisdom (Shakespeare-Finch et al., 2013). Tedeschi and Calhoun (2004) propose that the person at the pre-trauma state experiences a seismic event that challenges the person in areas of managing emotional distress, life narrative, fundamental schemes, beliefs, and goals.

PTG process and the way each component of PTG model contributes to the process will be explained briefly. Distress and cognitive processing go hand in hand and rebuilding of the assumptive world requires a lengthy process. Negative and intrusive rumination can be experienced while managing distressing emotions. Wu et al. (2015) explains that intrusive rumination is considered to relate to traumatic distress as it focuses on repetitive negative aspects of the trauma. It may increase distress, which can further facilitate growth. Cognitive processing and restructuring are two methods of the rebuilding process that take place after a psychologically seismic event. Tedeschi and Calhoun (2004) suggest that new schemas, assumptions, goals, and meanings can be produced when a person disengages from and gives up on certain assumptions and goals that are no longer accommodating to the new reality. Shakespeare-Finch et al. (2013) add that the trauma narrative consists of pre-trauma, traumatic event as a turning point, and post-trauma. In the process, a person reconstructs new beliefs and incorporates the trauma into their life narrative. As a result, the person may become more realistic and the schemas may become more comprehensive (Shakespeare-Finch et al., 2013). Ruminative process is event-related, and it enables the person to make meanings, problem solve, reminiscence, and anticipate. Cognitive processing is used to refer to this process of reflecting on the discrepancy of schemas, unattained goals, and events as they develop the trauma narrative. Research shows that deliberate, nonintrusive, and repetitive cognitive processing and PTG is associated (Tedeschi & Calhoun, 2004). Wu et al. (2015) states that deliberate rumination is a constructive process that builds understanding of the traumatic event, self, others, and the world. This process can challenge dysfunctional thinking and reduce PTSD symptoms.

Social support and self-disclosure are two mechanisms that aid PTG. Support enables people to construct their narrative and confront questions about meaning. By disclosing these narratives to others, relationships with others and new narratives can both get strengthened. In short, support can provide the ground for questioning and forming new assumptions, while facilitating understanding. Thus, support can influence growth both cognitively and emotionally. Emotional engagement and cognitive processing are considered as necessary ingredients for PTG to occur (Tedeschi & Calhoun, 2004).

To sum up, after the psychologically seismic event, the person might experience intrusive and automatic rumination. As the person self-discloses and receives social support, reduction in distress, management of intrusive rumination, and goal-disengagement is expected. Rumination is expected to get more deliberate by time, which is followed by schema development and narrative change. Taken altogether, this long-term and effortful process leads to PTG and wisdom.

1.3.2 Posttraumatic growth research and findings. There is no consensus regarding the expected amount of PTG after a traumatic event quantitatively or qualitatively. However, there are some research to portray some statistics regarding growth in populations and how it is experienced subjectively by people. Menculini et al. (2022) summarize that 15% of their Italian sample reported significant levels of PTG, while another research carried out in Hong Kong revealed a similar result with 20% of the sample showing significant PTG. However, other studies that were conducted in China report almost 50% of the sample showing significant PTG on at least one domain of PTG. These results may reveal the importance of cultural, social, and political aspects and their influences on PTG. Furthermore, Sun et al. (2021) conducted a qualitative study to find out how COVID-19 confirmed individuals experience PTG. They found that many individuals reported changing their values and priorities while valuing people in their lives more, appreciating life more, adhering to hygiene rules and healthy lifestyle, learning about their strengths and weaknesses, and experiencing increased will to help others.

Determinants of positive change include pre-trauma resources (individual and environmental factors), characteristics of the trauma, and post-trauma factors (such as coping) (Schaefer & Moos, 1992). Research regarding pre-trauma, trauma, and post-trauma factors will be introduced in the following literature findings.

Demographic factors are as important as environmental factors in PTG research. Regarding COVID-19 pandemic and PTG, studies report factors such as being female, younger age, being married, adverse childhood experiences, high SES, greater distress levels, knowing someone who died from COVID-19 disease, and PTSD symptoms to be linked with PTG (Cheng & Liu, 2021; Na et al., 2021). Women are known to report higher PTG scores than men. This pattern can be related to deeper ruminative processing, having more social support, seeking help, or can be about their engagement of more adaptive and expressive coping strategies (Akbar & Witruk, 2016; Prieto-Ursúa & Jódar, 2020). Regarding the age findings, Tedeschi and Calhoun (2004) suggest that there should be established schemas that will get challenged in the face of trauma. Thus, younger adults can be expected to report more growth than older adults, as they may be more open to learning and change, rather than having already many life lessons in their repertoire. Additionally, presence of higher PTSD symptomatology among younger generation (Ditlevsen & Elklit, 2010) may also be associated with higher PTG rates in that age group.

Some characteristics that are known to aid PTG process are extraversion, openness to experience, agreeableness, conscientiousness, hardiness, emotional stability, awareness of positive emotions, and optimism. Also, certain coping mechanisms such as acceptance, seeking social support, positive reframing, turning to religion, and problem solving are reported to be associated with higher growth (Joseph et al., 2012; Linley & Joseph, 2004; Tedeschi & Calhoun, 2004). Casali et al. (2021) suggests that certain personality characteristics such as zest, love, kindness, appreciation of beauty and excellence, gratitude, and spirituality are also known to be associated with PTG.

Larsen and Berenbaum (2015) posit that emotion regulation strategies are found to be important factors when predicting PTG. Suppression is found to be

related with PTSD, whereas emotional expression and processing is associated with PTG. Research shows that emotional coping can also be helpful depending on the event and the strategy being employed. Emotional processing was found helpful in PTG process through meaning making mechanism. Kunz et al. (2018) also suggests that both approach-oriented (positive reappraisal, acceptance etc.) and avoidance-oriented strategies are associated with higher PTG. Linley and Joseph (2004) also adds that both emotional and problem-oriented strategies are positively associated with PTG. Na et al. (2021) mention that many internal and external reminders that are associated with the trauma can be avoided to decrease distress in PTSD, which is known to be related to worse prognosis and higher distress. However, they propose that avoidance symptoms can contribute to and maintain PTG, which is in alignment with previous studies. Kunz et al. (2018) concludes that these results might imply how different strategies can be useful depending on different types and stages of traumatic experiences.

Na et al. (2021) show that among U.S. veterans, worries about mental and physical health effects of the pandemic is found to explain the highest variance in PTG and was positively associated with PTG. This finding is consistent with the view that distress can foster growth. It seems that traumas prior to the pandemic and PTG experiences associated with them can be an indicator of improvement in perceptions of perceived strength, social relationships, and life opportunities. In turn, these experiences may be useful resources to cope with potentially traumatic future events as well.

Consistent with the functional-descriptive model, a research about pregnancy loss conducted by Freedle and Kashubeck-West (2021) found that core belief challenge was a strong predictor of PTG. Participants showed both intrusive and deliberate rumination in the aftermath of loss. Results show that both intrusive and deliberate rumination were predicting PTG, whereas intrusive rumination predicted PTG negatively. Deliberate rumination is found to mediate the relationship between core belief challenge and PTG. Intrusive rumination is not found to mediate the relationship, which is in alignment with the view that intrusive rumination is a step in the process of challenged assumptions, which leads to more deliberate rumination,

rather than contributing to growth independently. Wu et al. (2015) reports that prolonged intrusive rumination is known to be a risk factor for PTSD, but also a predictor of PTG. Continued deliberate rumination is a protective factor for PTSD, and a predictive factor of PTG. These findings may reveal the contradictory nature of PTG, while emphasizing the importance of negative experiences in development of psychopathology and posttraumatic growth.

Lastly, one research conducted with COVID-19 patients who are discharged from the hospital reveals that shortening diagnosis time, increasing social support, positive coping style, self-esteem, and easing anger contributes to PTG. These results can be interpreted and implemented in health settings to promote better adjustment and growth. Also, PTSD symptoms and positive posttraumatic changes were found to coexist, which is in alignment with the previous findings (Yan et al., 2021).

1.3.3 Real and illusory growth. It is worth mentioning that the literature is uncertain about adaptive and maladaptive sides of PTG, and it would be best to assume that PTG can be either of that depending on the context (Eisma et al., 2019). As proposed by cognitive adaptation theory, when faced with a traumatic event, people can distort the reality to fit the event into their own existing schemas. This process is illusory and biased. Hence, PTG may have two sides as first being constructive and growth-oriented, while second one being deceptive and illusory. The Janus-Face model also proposes that people can try to counterbalance their persistent negative emotions related to the traumatic event by defending the benefits of the event as a coping mechanism (Tallman, 2013).

One study found that participants had inflated levels of belief in the PTG they would experience. Social psychological theory claims that individuals make self-comparison between their past, present, and future selves to maintain identity, control, and coherence. People tend to overestimate their future selves and depreciate past selves to make themselves appear better than they are (Tallman, 2013). Frazier et al. (2009) conducted a longitudinal study to measure the before and after of traumatic events to differentiate between actual and perceived growth. They found that the correlation between the actual change and reported change (PTG) was weak.

Another research reports that the correlation between the perceived and real change is moderated by degree of distress, as for the highest distressed participants, the relationship seems weak. This may indicate that growth is sometimes illusory and is a means for coping with the traumatic distress, in alignment with the view that there may be two sides of PTG with distinct underlying mechanisms and functions.

On the contrary, Boehm-Tabib, and Gelkopf (2021) found that PTG was associated with increased functioning. They found that PTG moderated the association between PTS, depression, and dissociation with functioning. This indicated that when PTG is higher, the relationship between depression, dissociation, PTS, and functioning becomes weaker. This study supports the view that PTG is a constructive agent to aid functioning as mentioned by the original theory, rather than an illusory way of dealing with distress. Another research done with breast cancer patients reveals that PTG is an ongoing process that expands beyond the traumatic event as it also increases the positive coping strategies directed at future events (Hamama-Raz et al., 2019). This might mean that PTG is both a process and an outcome at the same time, as it is an ongoing and interactive process.

Coping strategies are known to be associated with PTG. Approach-oriented coping strategies such as positive reappraisal and acceptance were found as the largest predictors of PTG in cancer patients. On the contrary, avoidance-oriented coping strategies such as denial and behavioral disengagement (avoidance of stressor and sense of uncontrollability over stressful events) were also found to be related to higher PTG. This is surprising as these coping mechanisms may indicate the lack of cognitive processing. These seemingly contradictory data can be an indication that PTG is not a uniform construct (Kunz et al., 2018). Linley and Joseph (2004) also suggested that both problem and emotion-focused coping are found to positively associate with PTG. It could also be possible that the traumatic event and enduring challenges related to it can be accompanied by both avoidance and approaching type of coping as different stages of traumatic experience can require different types of coping (Kunz et al., 2018).

1.4 COVID-19 and Existential Issues/Givens

Existential psychological approaches deal with the basic facts of life such as death, isolation, freedom, and meaning and address the anxiety that arise out of them. Suffering violates the assumptions people have about the world, is persistent, and influences people in fundamental ways. Contemplating existential themes results in anxiety (Van Tongeren & Showalter Van Tongeren, 2021).

Existential anxiety may undermine meaning as meaning implies coherence, purpose, and significance. Suffering on the other hand, often feels senseless, threatens significance, and undermines purpose. Existential threats reduce meaning and motivate search for and restoration of meaning. Meaning making model (MMM) proposes that the discrepancy between the expectancy and reality will result in distress, which will then trigger the meaning making process as a coping mechanism. Hence, meaning making can reduce suffering. This challenging process is a catalyst for growth (Van Tongeren & Showalter Van Tongeren, 2021). Victor Frankl, a holocaust survivor from Nazi death camps and a psychiatrist, proposes that painful realities and sufferings should be integrated into the narrative of life and made sense (Gordon et al., 2021). Yalom (1980) was influenced by Frankl and he also believed that humans have the intrinsic need of meaning making. For him, existential anxieties should be confronted and made sense of.

Meaning management theory also claims that humans seek meaning, understanding, and purpose as well as have the capacity to discover and create meaning out of their life experiences. Meaning is helpful when dealing with uncertainty, absurdity, and chaos. This theory is especially important in traumatic experiences, in which basic assumptions about ourselves and the world shatter. When no meaning makes sense for the negative experience as it can't be accommodated to our current schemas, we need to accept and construct a new meaning for that experience (Wong, 2010).

Coronavirus pandemic is an adverse and uncertain setting in which people feel powerless and out of control. Things that were once taken for granted such as safety,

security, freedom, mobility, socializing, and jobs are all taken away. People became more aware of their limitations and vulnerability over such crises. Common reactions include anger, hopelessness, and fear. In times like these, frustration, despair, powerlessness, and pain can be transformative agents for change and growth (Jans-Beken, 2021). PP 2.0, known as the second wave of positive psychology or existential positive psychology, suggests that life is a struggle in a dangerous world in which people should embrace and transform suffering and weaknesses into something positive to experience growth and happiness. The dynamic interplay between the positive and negative is emphasized in this approach (Jans-Beken, 2021).

Wong (2020) mentions about Victor Frankl's approach, his own approach of PP 2.0, and how it fits to the current COVID-19 pandemic. Frankl's ideas view the world as dualistic as everything exists in polarity with its opposite. Achieving balance between two polarities is considered as a successful adaptation, such as between suffering and happiness. Frankl believes that life is meaningful in essence, and that love and meaning can make humans win over all the obstacles such as the current pandemic. COVID-19 made death and suffering more visible than ever. The world transformed into a huge field to test out well-being, resilience, and suffering. Frankl suggests shifting our mindset from seeing the pandemic as the ultimate enemy and evil, to seeing suffering as a means for transformation, meaning, and purpose. As PP 2.0 emphasizes, suffering is always the undeniable part of life, and the pandemic is a reminder of the existential issues of suffering and death. Resolution of such existential crises is considered to lead to well-being and happiness in a paradoxical way. Wong (2011) also reminds that human experience would be lacking unless both positive and negative experiences are integrated. Joining these realms can capture the complexity of life. A theory of well-being should therefore capture both happiness and potential benefits of suffering. Thus, well-being is not positive minus negative but the sum of two. The ability to transform and transcend negative is a potential source for well-being.

In accordance with this view, Israelashvili (2021) found that resilience during the pandemic was associated with positive emotions and negatively associated with

negative emotions. The interesting part is that a significant interaction was found for positive emotions and high levels of negative emotions. This indicates the importance of positive emotions in the presence of negative emotions. This finding may stress the importance of duality and complexity of human experience, as well as the interplay between negative and positive emotions. These findings are in alignment with PP 2.0, which stresses the importance of balance between negative and positive emotions (Israelashvili, 2021).

Existential positive psychology (PP 2.0) proposes that positive and negative human experiences define being human. Existentialist perspective suggests that there are four existential challenges, which are paradoxical and humane part of human existence. These are called four dialectical existential givens (Greening, 1992). Yalom (1980) elaborates them as "ultimate concerns of life" that lead to existential crisis. He mentions a dynamic conflict between these issues and the wish for their opposites. Rather than overemphasis on one end of the polarity (negative or positive), it is advised to confront the paradox and to creatively respond to the interrelatedness of the paradox. In other words, overemphasis on the positive side, or the negative side is less useful and comprehensive. It is suggested to confront and respond to those challenges accordingly. Greening (1992) suggests that these should be dealt with creativity and acceptance to create mental health.

Life and death: Among many certainties that will be mentioned below, death is one of the most certain features of life. Humans live and die as the world supports and negates life. Humans are aware of their own mortality, and they wish for immortality. At times people feel lively, strong, capable and at times they are fragile, incapable, and in danger. People are live but also finite and mortal.

Freedom and determinism: Life may be chaotic, lacking profound ground and structure. Yet, people wish for some structure to feel grounded. People need to make decisions and take responsibility for such choices. People have freedom to choose and use their free will. Yet still, they are not capable of controlling everything that happen to them, and they are still surrounded by boundaries and responsibilities. People are both autonomous and dependent at the same time.

Community and isolation: People are social and interconnected beings but in essence, they are isolated and alone in their experiences, as nobody can experience the same thing they did. People are alone in their own body, skin, and experiences to a great extent. Everyone is phenomenologically alone in their experiences. However, people desire connection, togetherness, and protection.

Meaning and absurdity: People seek meaning in life and yet sometimes life seems to be very absurd, unfair, and constructing a meaning seems very hard. Meaninglessness is often like the result of all these other existential concerns and is a central theme of human life.

Van Tongeren and Showalter Van Tongeren (2021) summarize how all these existential themes that are mentioned above fit the COVID-19 pandemic. Isolation was prominent with lockdowns and distancing measures, which made people feel disconnected. Freedom theme was triggered when basic decisions about life became tiring and overwhelming due to the pandemic. People struggled with their losses and shifts in their identity and roles. Pandemic reminded people of their mortality every single day. Lastly, people struggled with finding significance, purpose, and meaning in their lives.

For the sake of this research, two major existential themes of meaning and death will be focused. This study will be conceptualizing and measuring these themes as "meaning in life" and "death anxiety" specifically. Additionally, "loss" will be examined, which is also closely related to the existential themes mentioned above.

1.5 Uncertainty and the Pandemic

Freeston et al. (1994) defines intolerance of uncertainty (IU) as a biased way of perceiving, interpreting, and responding to uncertain situations. Individuals respond to the uncertain situation with cognitive, emotional, and behavioral reactions. Usually, the uncertain situation is seen as dangerous, upsetting, stressful, and negative. People with intolerance of uncertainty usually try to avoid uncertain

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situations and have difficulty functioning when confronted with uncertainty (Buhr & Dugas, 2002). Buhr and Dugas (2002) suggest that there are four dimensions of intolerance of uncertainty which are: 1- inability to take an action, 2- stressful and upsetting feelings, 3- negative bias and avoidance towards unexpected events, and 4- future uncertainty perceived as unjust. Recently, IU is conceptualized as an individual trait. There are prospective and inhibitory types which are defined as cognitive assessments related to unforeseen future events and the behavioral component of inhibition or paralysis, respectively (Parlapani et al., 2020).

Intolerance of uncertainty is seen as a transdiagnostic factor. People who are not able to tolerate uncertainty are also known to be at higher risk of developing PTSS after negative events. IU is associated with sleep disturbances, health anxiety, fear of COVID-19, depression, and emotional eating (Çelik et al., 2021). Literature shows that people respond to uncertainty with fear, anxiety, boredom, loneliness, and depression (Sarry et al., 2021). Emotional responses given to uncertainty are usually related to anxiety and sadness. These responses associate with neuroticism, low-self-esteem, negative emotions, and inability to handle stressful situations. On a cognitive level, people deal with uncertainty by seeking clarification, making plans, and gathering information. These responses are associated with tolerance for ambiguity. Individuals who desire for change may enjoy uncertainty, change, and adaptation (Sarry et al., 2021). Two different ways of coping with uncertainty can be exemplified as over-engagement, which can be seen as safety behaviors and under-engagement, which is related to avoidance of uncertain situations. Over-engagement can be exemplified as over-preparation, repeated questioning, prolonged research about the uncertainty etc. Under-engagement can be seen as procrastination, distraction, and avoidance (Freeston et al., 2020).

Even though uncertainty may usually be seen as normal, prolonged or chronic uncertainty is usually threatening (Anderson et al., 2019). An important obstacle about the pandemic is its unprecedented nature. Even though some people fear uncertainty more than others, uncertainty usually provokes anxiety. Uncertainty usually triggers the idea that something bad will come out of it, which sounds ironically sensible in the context of the pandemic. During the pandemic, certain

negative consequences may be more accessible to people rather than positive ones. A persistent focus on the negative and attributing negative outcomes to uncertainty are known to be detrimental for mental health (Kruglanski et al., 2021).

Confronting with COVID-19 and the contagion in a sudden and actual manner could make people realize how uncertain life really is, which is one of the major psychological and cognitive stressors. COVID-19 is uncertain as it is not possible to accurately predict the outcomes associated with it, the course of disease, where the virus is, and the diagnosis and treatment methods are still in advancement (Wu et al., 2021). As opposed to other threats, COVID-19 and contagion are highly ambiguous and invisible threats as we have no chance of knowing where, when, and how we will face them nor imagine how we or our loved ones will get impacted by them. People have freedom and they are responsible for the choices they make about what preventative behaviors to engage in, when and how to socialize, when to visit a doctor, which information source to trust, how to transport, and many other choices to make (Palitsky et al., 2021). In essence, there is a lack of information and certainty around health, work, education, economy, restrictions, and the virus itself (Voitsidis et al., 2021). Additionally, as Bavolar et al. (2021) state, clear and unambiguous messages given by authorities are helpful to reduce uncertainty in public. The lack of clarity might be about the unknown components of the illness, lack of clear communication, inability to understand the explanations about the illness or about conflictual information (Freeston et al., 2020).

There is a vast amount of research suggesting an association between anxiety and IU. A study conducted in Turkey during the pandemic found that people with higher intolerance of uncertainty were more likely to perceive the pandemic as threatening and experience more anxiety. This result was attributed to inconsistencies, lacking policies, and lack of support by the government in Turkey. Results also showed negative correlation between age and intolerance of uncertainty, which is mainly attributed to the repertoire of life experiences and coping skills that older adults possess (Pak et al., 2021). Another research conducted during COVID-19 shows that 69% of participants perceive uncertainty as a threat, make poor decisions, engage in polarized black and white thinking, experience inability to think

possibilities, avoid opaque and vague, have anxiety towards uncertainty, have preference towards familiar, and reject the unusual (Pogorilska et al., 2021).

Other than anxiety, some research revealed the importance of other psychological problems and processes such as rumination to be associated with intolerance of uncertainty. A research conducted during COVID-19 found that intolerance of uncertainty had a strong indirect effect on distress through fear of contagion and media consumption variables (Blanuša et al., 2020). Satici et al. (2020) found that rumination and fear of COVID-19 mediated the relationship between intolerance of uncertainty and mental well-being. It was seen that IU increased rumination, which in turn increased COVID-19 fear, and reduced well-being. Bakioğlu et al. (2020) found that fear of COVID-19 positively predicted depression, anxiety, and stress directly and through intolerance of uncertainty. In the literature, rumination was reported to mediate the relationship between depression and IU, as individual copes with uncertainty through rumination, followed by an acceptance about the certainty of negative outcomes, leading to depressive symptomatology (Voitsidis et al., 2021).

Research found that acquiring positive information about COVID-19 reduced uncertainty and risk perception in individuals. However, this effect is stronger on college students whose tolerance for uncertainty is high (Zhao et al., 2021). Meaning, participants who have intolerance of uncertainty are not experiencing reduction in their anxiety when confronted with positive information as much as participants who are more tolerant. On a behavioral level, people with strong emotionality towards uncertainty might stockpile and turn into hedonic behavior to cope with fear and anxiety. Also, those who give a cognitive response to uncertainty may engage in the same behavior through planned actions and strategies to reduce uncertainty. Thus, same behavior may be associated with different responses to uncertainty. Author suggests that self-control may support adherence to preventative, health-related, and prosocial behaviors. In this manner, forming habits in compliance with health instructions such as hand sanitizers, social distancing, and masks can be a less effortful and efficient way of coping with the uncertainty (Rodriguez et al., 2021).

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1.6 Meaning and the Pandemic

Meaning means coherence, significance, and purpose (Van Tongeren et al., 2017). Meaning in life refers to the value, worth, and significance of one's life (Van Tongeren & Green, 2018). To define briefly, coherence is a sense of comprehensibility and making sense of one's life. Significance refers to the belief that one's life matters, has a value, and is worth living. Purpose indicates a sense of having goals, aims and direction in one's life. (Martela & Steger, 2016). Steger et al. (2006) describes meaning as the feeling that one's life is significant and having an attachment to something greater than oneself.

Purpose and significance of life can be entangled most of the time. Significance may be partially dependent on the purpose of life (Martela & Steger, 2016). During the pandemic, people might lose their goals in life due to losses such as education and occupation. Thus, the loss of goal may deprive people of meaning, value, and purpose (De Jong et al., 2020). Additionally, significance is also dependent on social relationships and support, which are negatively affected by the pandemic as well. In the pandemic context, life became uncertain, senseless, incoherent and many people lost their purpose and aim. Hence, these aspects are important to consider, tolerate and creatively respond to, in order to create a new meaning in life (Martela & Steger, 2016). Mert et al. (2021) stress that it is important to study protective and mitigating factors during the pandemic to ensure well-being of individuals.

Meaning is defined in different ways and its function is also debated by researchers. It is obvious that life without a meaning is hard to navigate and bear. Meaning can be considered as a source of motivation or as an ally to tame the existential terror people feel. Meaning maintenance model (MMM) proposes that creating and maintaining meaning is the primary social motivation. Meaning making system consists of self-esteem, closure/certainty, belongingness, and symbolic immortality. Thus, meaning is found in positive self-concepts, resolving uncertainty and ambiguity, having close relationships, and connecting oneself with a larger entity or striving for personal significance such as religion or writing a masterpiece that

will outlive the individual. This model emphasizes the significance of meaning making and proposes that people vigorously try to maintain and create meaning as it is important for security and psychological equanimity (Van Tongeren & Green, 2010).

According to Frankl (1992), everyone discovers their own meaning in life by themselves and meaning serves as a strong tie to hold people in this unknown universe. Meaning in life is shown to have benefits for mental and physical health (De Jong et al., 2020). Meaning in life is an acknowledged psychological resource, which is both a coping and resilience factor. Yalom (1980) believes that humans have the intrinsic need of meaning making. For Yalom, existential anxieties should be confronted and made sense. However, extremely threatening and stressful events may undermine meaning and trigger existential crisis (Schnell & Krampe, 2020). Existential threats undermine meaning and motivate people to search for or defend their meaning in life. As meaning reduces suffering, meaning making may also be functioning as a coping mechanism in such threatening circumstances (Van Tongeren & Showalter Van Tongeren, 2021). Meaning gains more importance when dealing with uncertain, absurd, and chaotic situations. Situations that tend to shatter the assumptive world require meaning making efforts. When meaning can't be derived and the experience doesn't fit into the current schemas of an individual, acceptance of the event and reconstruction of a new meaning is required (Wong, 2010).

Finding meaning is central to the trauma and grief literature. Loss of normalcy and grief over what is lost during the pandemic can lead to a sense of loss in meaning in life (De Jong et al., 2020). Finding meaning is associated with psychological health in the literature, especially after traumatic experiences. As described by Frankl, tragic optimism is the state where an individual accepts the inevitability of suffering as a fact and finds an opportunity for deriving a meaning. It is often reported that search for meaning indicates the existence of shattered assumptions and inability to construct new schemas. It may mean the struggle is ongoing. In contrast, presence of meaning is often associated with formation of new schemas, lower depressive symptoms, and lower neuroticism. A study found that meaning in life was

associated with greater positive changes after adversity, whereas search for meaning was associated with negative change. It seems that search for meaning in and of itself is insufficient to lead to positive changes, but is an essential step for positive change (Linley & Joseph, 2011). Related to this search and existence of meaning in life distinction, Steger et al. (2006) suggest that presence of meaning and search for meaning are negatively correlated. Van Tongeren and Green (2010) suggest that when confronted with a threat, maintaining meaning would be a better strategy than searching for meaning, as the latter indicates that one is uncertain about the meaning. Thus, it is suggested that in times of uncertainty and threat towards meaning, individuals are likely to defend their meaning and report that their life is meaningful. That research found that meaning is automatically defended to combat meaninglessness, even though some research supports otherwise.

A large body of research proposes the buffering effect of meaning in crisis. Literature shows that meaningfulness moderates the relationship between distress and stressors such as Alzheimer's disease, trauma, cancer, and chronic diseases. Results suggest that presence of meaning is associated with lower pain perception, less physiological symptoms and illness behavior, and less mental distress (Schnell & Krampe, 2020). One research conducted after 9/11 terrorist attacks revealed that finding meaning in the aftermath of trauma was related to lower PTSS in general population (De Jong et al., 2020). In alignment with the literature, the study found that presence of meaning acts as a buffer and provides a stable foundation during COVID-19 crisis. It is discussed that having meaning results in goal-pursuit, which in turn strengthens meaning in life (Schnell & Krampe, 2020).

There are certain demographic factors associated with meaning in life. Research conducted around April-June 2020 found that women report higher meaning in life, report more attachment to social bonds, and follow more media sources. Additionally, it was found that perception of good health is associated with less psychological discomfort and higher meaning in life. Furthermore, participants who perceived strong social ties reported higher meaning in life during the pandemic. They add that the negative correlation between psychological distress and meaning in life could work as a protective factor for people who attribute meaning to life during

the pandemic (Özdemir & Çeviker, 2021). Regarding age and meaning in life relationship, a study found a linear negative relationship between age and search for meaning in life (Allan et al., 2015). Presence of meaning in life may be higher in older population whereas search for meaning is usually higher in younger participants, associated with the exploration of identity and what to pursue in life. Some research also support lower presence of meaning in life in older adults as they may have fewer projects and goals in their lives, requiring them to transition into new roles and find meaning associated with them (Steger et al., 2009).

Some studies emphasize the importance of meaning as a coping strategy to be utilized during the pandemic. A study found that coping strategies centered around meaning rather than problem-solving work better in the pandemic situation. It can be interpreted as uncontrollable situations are handled better by sense making. Thus, different coping strategies can be less or more helpful depending on the context. This study found that emotion-focused and problem-focused coping were associated with greater distress (Quiroga-Garza et al., 2021). Similarly, Eisenbeck et al. (2021) found that even though COVID-19 related stressors and risk factors correlate with psychological distress, this relationship is found to be modulated by meaning-centered coping. Thus, meaning-centered coping is found to be diminishing the effect of COVID-19 related stressors.

Studies demonstrate that higher meaning in life is positively associated with quality of life, optimism, self-efficacy, self-esteem, adaptive coping, life satisfaction, subjective well-being, psychological well-being, and negatively associated with depression, anxiety, somatization, distress, and suicidal thoughts (Arslan et al., 2020; Yıldırım et al., 2021). Kul et al. (2020) found that there is positive correlation between existing meaning in life and psychological resilience, suggesting that people with higher meaning in life are stronger against stressors and may interpret their pain through the meaning they convey. In alignment with these results, Karataş et al. (2021) report that meaning in life and hope contribute to life satisfaction and well-being. Researchers report that the contribution of COVID-19 fear on life satisfaction is decreased by positive influences of meaning in life and hope.

All these results indicate the importance of positive factors in the presence of negative emotions and circumstances. Meaning in life is consistently found as a factor to promote well-being, resilience, life satisfaction, and negatively associated with psychological problems. Importance of meaning in crisis is stressed repeatedly in literature.

1.7 Death and the Pandemic

Fear of death is a central and universal human experience (Becker, 1973). According to Yalom (2008), we are "forever shadowed by the knowledge that we will grow, blossom, and inevitably, diminish and die" (p.1). Humans are always shadowed by this acknowledgement that there is an end to our life.

Death is widely presented in ancient and modern arts, literature, philosophy, and psychology. Death anxiety can invoke meaninglessness, powerlessness, loss of control, and separation as well as fulfillment and happiness (Iverach et al., 2014). Adaptive ways of coping with death include building meaningful relationships and leaving a positive legacy (Yalom, 2008). However, fear of death may result with significant fear, meaninglessness, and some maladaptive coping strategies such as avoidance (Menzies & Menzies, 2020). Death anxiety seems special in a sense that it is inevitable and it eliminates all sorts of desires such as control, pleasure, identity, belonging, meaning, certainty, relationships, self-actualization, and self-determination (Pyszczynski et al., 2006).

Death anxiety is a transdiagnostic factor for a range of mental health issues such as panic disorder, somatic symptoms, health anxiety, OCD, separation anxiety, depression, hypochondriasis, PTSD, and eating disorders. Death anxiety is found to be associated with increases in hand-washing frequency in OCD patients, number of doctor visits and body-checking behaviors in people with health anxiety and panic disorder, and social avoidance in people with social anxiety. These results may imply that fear of death is a transdiagnostic factor underlying many mental health conditions (Menzies & Menzies, 2020). Iverach et al. (2014) emphasize that transdiagnostic factors are known to contribute to the development, course, and

maintenance of disorders. Revolving door phenomenon is used to describe the situation when a person comes back with a different symptomatology even though the treatment and therapy was terminated successfully. Death anxiety can be the reason why people come back with different issues, as the core of the problem remains untouched in therapy. (Menzies & Menzies, 2020)

Death anxiety may include fear of the physical aspect or dying itself (pain, losing consciousness, loss of control), death of a loved one, uncertainty of death, life after death, or non-existence. Different types of fears regarding death and behaviors (adaptive and maladaptive) associated with them should be investigated during the pandemic as it influences physical and mental health of individuals and the society simultaneously (Menzies & Menzies, 2020; Van Tongeren et al., 2017).

COVID-19 is a unique stressor that constantly reminds people of death. Death tolls, transmissions, images of people suffering or other reminders of death such as face masks can be considered as constant reminders of death. COVID-19 not only increased death anxiety but also led to real death incidents around the globe. Additional losses happened in domains of social life, finance, and security. Losses are particularly more challenging during the pandemic as secondary losses take place in addition to real deaths. Social support is hard to receive due to restrictions and deaths can violate core beliefs of people. It seems that the pandemic looks like a global mortality salience study (Menzies et al., 2020). As mortality awareness increases due to the pandemic, defensiveness and negativity is expected to increase as well. Nonetheless, increased anxiety and fear can be contributors of posttraumatic growth (Cox et al., 2021).

In the context of COVID-19, death anxiety is found to be associated with anxious behaviors and beliefs towards the COVID-19. Death anxiety seems like a force that drives behavior during the pandemic even though some people might be unaware of it (Menzies & Menzies, 2020). Although most of the mortality salience studies take place in laboratories, findings demonstrate that epidemics and virus outbreaks increase death-related thoughts, as well as defensive behaviors. Studies show that death reminders increase hostility towards other cultures such as racism

and xenophobia, increase adherence and faith to one's nation, religion, or culture, increase seeking attachment through loved ones, and increase efforts to sustain self-esteem through goal directed behaviors that are in accordance with one's worldview. These are called distal defenses, which are unconscious and symbolic ways of dealing with the fear of death. On the other hand, proximal defenses can be exemplified as rushing for drugs that are mentioned on social media to cure viruses (death avoidance), denial of one's vulnerability, normalizing the virus by comparing it with seasonal flu, and other numbing behaviors such as binging or substance use. This mechanism deals with the actual threat in a conscious way (Menzies et al., 2020; Menzies & Menzies, 2020). Of course, there are adaptive ways of dealing with death anxiety such as wearing mask, self-hygiene, social distancing, and other health promoting behaviors (Pyszczynski et al., 2021).

It is suggested that not all people can manage their death anxiety through living a meaningful and purposeful life. As a result, maladaptive strategies for dealing with death anxiety are not uncommon. As the pandemic increases awareness of our vulnerability, maladaptive strategies such as use of unprescribed medicines and unhealthy chemicals to ward off the virus, and distraction strategies such as substance addictions may be utilized by individuals. Also, people experience loss of financial, social, and educational sources of security, meaning, and self-esteem. Anxiety regarding death can be unmanageable when defenses are inadequate. Exposure to social media and conflicting information regarding the virus can also increase anxiety (Pyszczynski et al., 2021). In sum, both adaptive and maladaptive reactions to death awareness can be observed during the pandemic.

Here, some findings regarding death anxiety and sociodemographic correlations are presented. Iverach et al. (2014) explains that being female, old age, and lower psychological health are associated with higher death anxiety, whereas higher education, higher SES, and good physical health are usually associated with lower death anxiety. It is also added that being religious seems to be associated with lower death anxiety, even though it may not always be the case. Regarding gender differences, research conducted by Bukhari and Asim (2021) also suggests that females have higher death anxiety than males during the pandemic. These results

may be related to gender differences in self-expression of emotions. Females are more open to cry and admit fear whereas man might deny and suppress such emotions to seek desirability. Contrary to the age-related finding stated above, a study found that younger age and death of a family member due to COVID-19 were significantly associated with death anxiety. In that sample, 20% of participants reported high levels of anxiety. Research support that there is a negative relationship between age and death anxiety (Mirhosseini et al., 2021). Lower death anxiety that is reported in older population may be partially associated with increase in religiosity as people age, coming in terms with death, and denial of the fear of death as the reality of death approaches (Krause et al., 2018; Russac et al., 2007).

Research suggests that while death anxiety is a basic driving force to our lives, it may be even more relevant during the pandemic. Earlier research suggests that fear of death is associated with anxiety regarding the virus and distress (Menzies & Menzies, 2020). A study conducted in Turkey during the pandemic around two months after the lockdown ended, reveals that in general 59% of participants report "sometimes" experiencing anxiety. More specifically, results show that 26% of the sample reported "frequent" anxiety about losing their lives. Whereas 58% of participants report thinking of getting closer to death "sometimes", 21% of participants report "frequently" thinking that they are getting closer to death. Also, 63% of participants "frequently" fear losing their lives, and 33% of participants "sometimes" fear losing their lives. In addition to these results, research reveals that there was a positive correlation between time spent watching news and death anxiety (Turhan, 2021). These results may point to the increased death anxiety and death-related thinking during the pandemic.

1.8 Loss and the Pandemic

Loss and bereavement are universal experiences (Eisma et al., 2019). As the pandemic proceeds, the number of deaths, people that are infected and bereaved becomes larger every single day (Chen & Tang, 2021). Losing a loved one can be very unexpected and sudden during the pandemic. Other than loss of a loved one, economic losses such as loss of a job, financial stability, socialization, livelihood,

hope, freedom, loss of pre-pandemic way of living, and loss of normalcy (repetitive hand washing and avoidance of contact could be considered pathologic outside of the pandemic context) are also major issues experienced (Ho et al., 2020; Mayer, 2021; Walsh, 2020). Sudden and traumatic deaths in the families due to COVID-19 resulted in abrupt role transitions for the bereaved people that are left behind, sorrow due to not being able to say last goodbyes or stay with the sick person, guilt about not being able to make a normal funeral, and inability to receive help and support from others. In addition to these, many other types of losses take place during the pandemic as mentioned above (Ho et al., 2020).

Losing someone or experiencing a significant lifestyle change is described as a primary loss. Additionally, secondary losses may occur as a result of primary losses. For example, after losing the significant other, the person can experience loss of company, sexual intimacy, and certain roles. Secondary losses can be related to identity and abilities. Lockdown can be conceptualized as a loss of freedom. Secondary losses associated with lockdown can be loss of relationships and social support. Also, a primary loss such as a job loss can be accompanied with other losses of security, identity, independence, health, and a sense of future. During this pandemic, many primary losses such as death, health, relationships, freedom, and employment take place. Such multiple losses are detrimental for physical and mental health of people (Zhai & Du, 2020).

Grief is important to mention while discussing loss. It is known to be a natural and healthy reaction to loss of a loved one. Even though it may not be ideal to give a time frame for grief and acknowledge that everyone can experience loss and grief uniquely, Gesi et al. (2020) mentions that most people adapt and gain a new sense of normalcy within a year after the loss. When processing death and moving on with life becomes problematic, complicated grief (CG) can be mentioned. This is known to be an impairing and chronic type of grief. Sudden and unexpected death with no chance of contact is associated with PTSD and prolonged grief disorder. In China, prolonged grief disorder due to COVID-19 was found to be 37.8%. In a sample of Dutch participants, more severe grief responses were measured due to COVID-19 when compared with people that bereave due to natural deaths. Also, 66% of

American participants who have lost their loved ones due to COVID-19 were qualified for dysfunctional grief. COVID-19 context might make bereavement harder than before as people are unable to say their last goodbye, attend to the funeral normally, or receive social support with ease (Chen & Tang, 2021).

Mourners usually struggle with emotions of guilt, longing, loneliness, and desolation, which can impact their functioning for an extended period of time. Previous research shows that there are risk factors associated with bereavement complications. These include social isolation, death at a young age, unexpected death, lower education level or SES, insecure and anxious attachment, conflictual relationships, unfinished business, closeness to the deceased, and inability to make sense of loss (Chen & Tang, 2021; Menzies et al., 2020). These risk factors are all relevant in the current pandemic. Mourners were unable to say their last goodbyes to their loved ones as regulations banned physical contact and accompanied to control transmission of the disease. Funerals were restricted, postponed, and performed online. Mourners were also not able to support each other due to travel bans (Menzies et al., 2020) .

"Bad death" is an important concept closely related to the COVID-19 pandemic. It is characterized by physical discomfort, difficulty breathing, social isolation, lack of preparation, psychological distress, unwanted treatments, or deprivation of wanted treatments. Due to the excessive burden of cases on the healthcare system, bad deaths have increased during the pandemic. Deaths are also known to take place in hospitals and ICU (intensive care units) rather than at home. When these are taken together, meaningful conversations with the loved one, receiving social support, saying last goodbyes, and providing the patient with comfort and care is harder than before, if possible. Bereaved people saw their loved ones suffer and were not able to make contact with them (Carr et al., 2020). Furthermore, COVID-19 associated deaths are accompanied by other stressors such as financial struggles, health concerns, isolation, anxiety about mortality, and worries regarding family members (World Health Organization, 2020).

Just like traumatic experiences, losing someone or something significant can accompany PTG (Eisma et al., 2019). Losses and traumatic losses tend to violate assumptions, meaning, dreams, and purpose. Loss might take some roles away and bring new roles to the bereaved, while changing the dynamics of the family. Some portion of people who experience loss report building a life with better quality, forming new goals, new perspectives, and having a better sense of what makes them happy. Individuals who experience shattered assumptions, loss of meaning, and loss of goals might report a rebuilding process and personal growth after loss. When the event doesn't make sense and the loss is senseless, the person might discard the question of "why?" and seek a value or opportunity for growth (Davis et al., 2007).

1.9 Relationships Between Variables

This section is dedicated to the relationships between our research variables specifically, as the literature was presented separately for each individual variable in the previous sections.

1.9.1 Posttraumatic stress. Even though traumatic stress and posttraumatic growth sound like they are two ends of the spectrum and that presence of one should cancel out the other, it is often not the case. Instead, they often coexist. It is important to note that posttraumatic growth doesn't necessarily mean reduction in psychological distress or increase in well-being, even though growth usually accompanies reduction in distress. Mostly, people who experience PTG also acknowledge distress. Distress may be the fuel of PTG as coping with a traumatic experience emotionally and cognitively usually creates distress (Tedeschi & Calhoun, 2004). Hyun et al. (2021) states that distress tolerance was found to be negatively associated with PTG, which can be in alignment with the view that a certain amount of distress is necessary for growth to occur.

As discussed in the literature, it seems that PTS and PTG relationship is influenced by the intensity of posttraumatic stress (Joseph et al., 2012). Research done with participants from Canada and U.S. shows that during the pandemic, high levels of pandemic stress is associated with moderate to high levels of posttraumatic

growth. 77% of participants reported one or more positive changes in their lives such as self-reliance, appreciation of health workers, value of one's life, stronger social bonds, and new priorities in life due to the pandemic (Asmundson et al., 2021). Joseph et al. (2012) propose that high stress is associated with higher growth to a point and then the growth declines if that stress threshold is exceeded. Moderate levels of stress can be an indication that the assumptive world is challenged, yet the person can engage in trauma processing and cope with the trauma. However, high levels of traumatic stress (a possible PTSD diagnosis), may undermine the coping ability and processing of the trauma. Similarly, Karaman et al. (2021) conducted a study with health care workers, which reveals that between first measurement and six-month follow-up, there was statistically significant increase in stress and decrease in PTG. This result also shows that prolonged distress can undermine growth. Many studies report an inverted U-shape between posttraumatic stress and PTG (Joseph et al., 2012; Karaman et al., 2021; Na et al., 2021; Shakespeare-Finch & Lurie-Beck, 2014).

Theoretically, the curvilinear inverted U-shape pattern poses 3 ways of responding to traumatic events: a- little distress and little PTG, b- moderate distress and high PTG, c- high distress and low PTG. This model is in alignment with the view that a person should experience a certain amount of distress to experience positive changes (Eisma et al., 2019). One research found 3 different patterns of trauma and PTG among adolescents: a- high PTG score and low depression and PTSD score, b- low level of PTG and high levels of PTSD and depression, c- high levels of PTG and moderate levels of PTSD and depressive symptoms. While the first one can be labeled as the growth group, second one is labeled as the distress group and the last pattern is the struggling group. This result is in alignment with the view that multiple posttraumatic reactions can co-occur. Also, a resilient group is usually detected in the previous studies marked by low levels of PTG, PTSD and depression (Zhen & Zhou, 2021).

Koliouli and Canellopoulos (2021) state that PTG and PTSD (or distress) seems to be independent factors. However, avoidance and intrusive thoughts we encounter in PTSD are highly associated with PTG. Larsen and Berenbaum (2015)

also found that PTG and distress to be separable constructs with small correlation, yet the correlation was found insignificant. Shakespeare-Finch and Lurie-Beck (2014) reported a curvilinear relationship between PTG and posttraumatic stress with 0.32 correlation, by also warning about the coexistence of positive and negative posttraumatic outcomes.

There is research indicating significant relationships between specific domains of PTSS and PTG. Research propose that severity of distress, trauma type, and symptoms of distress can be related to different domains of PTG. Lower posttraumatic stress seems to be correlated with higher "personal strength", whereas higher distress is associated with "spirituality" and "appreciation of life". Results also reveal that different trauma types may be associated with different areas of growth. According to the study, the bereaved group reported higher PTG in the domains of "appreciation of life" and "relating to others" than individuals who experienced sexual assault. Natural disaster group reported higher PTG in domain of "relating to others" in comparison to people who lost a loved one. Bereaved group showed less growth on "appreciation of life" domain when compared with natural disaster and sexual assault groups (Karancı et al., 2012).

In another research, certain PTSS are associated with a variety of PTG domains. For instance, re-experiencing symptom cluster of PTSD is found to be associated with "appreciation of life" domain of PTG, supporting the theory that PTG occurs by the coexistence of rumination and cognitive processing. Hyperarousal domain was found to be negatively associated with "relating to others" domain of PTG, which is consistent with the expectation that hyperarousal is often followed by avoidance. Anxious arousal domain of PTSD was found to be positively correlated with "appreciation of life", "new possibilities", and "personal strength" domains (Tiamiyu et al., 2016). A recent study found higher avoidance and hyperarousal scores in participants with a borderline score of 24 in IES (Impact of Event Scale). A recent study conducted by Szepietowska et al. (2022) suggests that participants who reported positive or negative changes due to pandemic were mostly distinguishable by their hyperarousal symptom intensity in particular. It is found that negative changes attributed to the pandemic were associated with hyperarousal symptoms,

whereas intrusion symptoms were associated with lower perception of losses. Intrusion symptoms may be related to slowing down, routinization of life, sense of security and control over life, which seems to foster a sense of positive change during the pandemic. However, it should be noted that some behaviors may be driven from anxiety, even though participants report a positive sense of gain.

1.9.2 Meaning in life, death anxiety, and intolerance of uncertainty. There are many research to suggest the importance of meaning in crisis like the current pandemic, as pandemic may undermine meaning and shatter the assumptive world that people have constructed (Martela & Steger, 2016; Schnell & Krampe, 2020). Previous research indicates that meaning in life is a buffer against negative reactions to the pandemic and predicts resilience (Korkmaz & Güloğlu, 2021). In literature, meaning is consistently found to be associated with better psychological well-being and lower psychological distress, as well as PTSS (De Jong et al., 2020; Martela & Steger, 2016; Schnell & Krampe, 2020). Similarly, meaningfulness is reported to be associated negatively with mental distress, while mediating the relationship between COVID-19 stress and general mental distress (Korkmaz & Güloğlu, 2021). Research additionally suggests that existential anxiety moderates the relationship between posttraumatic stress and growth via meaning making process (Tomaszek & Muchacka-Cymerman, 2020). In one study, meaning in life mediated the relationship between COVID-19 suffering and satisfaction with life. Stress-related growth was found to buffer the effect of COVID-19 suffering on meaning in life and satisfaction with life. Individuals with higher stress-related growth were less vulnerable to suffer from COVID-19 and report greater meaning in life and satisfaction with life (Yıldırım & Arslan, 2021). Lastly, Prieto-Ursúa and Jódar (2020) state that having goals and purpose in life was associated with PTG more than thinking life is meaningful and valuable. This indicates that different dimensions of meaning can contribute to PTG differently. These results stress the crucial role of meaning in negative and positive reactions given to the pandemic.

There is respectable amount of evidence suggesting a negative relationship between meaning in life and death anxiety. Research found that reminder of death lowers one's meaning in life when death anxiety is high (Menzies et al., 2019)**.** A

study found that when reminded of death, people are likely to invest in religion and close relationships, which can be sources of meaning. Participants are likely to report higher fear of death when they score lower on the meaning of life (Cox et al., 2021). Previous research argues that maintaining meaning reduces fear of death. Some research found that reminders of death elicit a more negative interpretation of a meaningless stimulus. Other research considered meaning as a social motive and demonstrated that threats to meaning trigger compensatory mechanisms to regain meaning (Van Tongeren et al., 2017). An interesting finding shows that meaning in life is related to greater death-related thought accessibility, suggesting that there is more to lose in the face of death when life is perceived as more valuable. This research suggests that meaning in life can be paradoxical (Van Tongeren & Green, 2018).

It appears that people seek meaning when faced with mortality and uncertainty. However, while grieving over what is lost with the disruption and loss of normality, it can be expected to experience meaninglessness and lower well-being. As we know, meaning (presence and significance) is positively associated with the posttraumatic growth process after bereavement and trauma. It is also found that meaning and life satisfaction is associated with lower anxiety and distress during the pandemic. This suggests that meaning can be a buffer against anxiety to improve well-being. However, prolonged search for meaning is associated with negative emotions such as hopelessness (De Jong et al., 2020; Martela & Steger, 2016).

As pandemic is more uncertain than normal daily hustles people experience, intolerance of uncertainty gains even more importance in the pandemic context. Also, confronting reminders of death daily seems to increase anxiety around death. One study shows that intolerance of uncertainty and meaning in life are strong predictors of anxiety and depression. In the study, those who can't tolerate uncertainty were found to have high levels of anxiety and depression (Korkmaz & Güloğlu, 2021).

1.10 Aim and Importance of the Study

This study aims to examine and understand some of the existential issues/givens and individual factors during the COVID-19 pandemic, and how they relate to and impact posttraumatic growth. To put it more specifically, posttraumatic stress, intolerance of uncertainty, loss, meaning in life, and death anxiety are anticipated to predict posttraumatic growth. This research evolved from the need to understand the current picture during the pandemic and guided by the literature to capture these themes mentioned above. Hopefully, this study will contribute to the novel growing literature regarding these themes.

Importance of this research derives from the necessity to understand the current crisis as well as filling the gap in the literature regarding the pandemic, existential themes, and growth-oriented approaches. These aims seem to blend in together seamlessly during the pandemic. Some of the most prominent reasons for conducting this research will be mentioned briefly. During the pandemic, mental health problems are vastly researched in comparison to positive mental health, which are relatively few. Also, mental health difficulties experienced during such disasters are found to persist over time, needing specific concern (Casali et al., 2021). There are only a few studies that examined the extent of PTG during the COVID-19 pandemic. Given that the influences of the pandemic will be long-term for individuals, it is crucial to investigate the conditions under which some people can experience growth (Hyun et al., 2021). It is also important to understand how pandemics differ from other traumatic stressors mentioned in the literature, both as a stressor and source of growth. Furthermore, this research can help us understand the potential risk factors and protective factors with respect to posttraumatic stress and posttraumatic growth.

Even though this research will only reveal associations and not be inferring any causality, it is still crucial to focus on the pandemic, its short and long-term influences, the differences between certain groups on how they respond to and function during and after the pandemic, what are some of the potential risk and protective factors that may gain importance during the pandemic, and how they can be utilized by governments, services, and therapy settings to alleviate current

psychological issues as well as strengthening protective factors to promote resilience and positive change in individuals. To our knowledge, this is the first study to look at the predictive role of posttraumatic stress, intolerance of uncertainty, loss, death anxiety, and meaning in life in relation to posttraumatic growth. Additionally, perceived religiosity and age variables are controlled in this study as these variables are expected to be related to meaning in life, death anxiety, intolerance of uncertainty, perceptions of loss, as well as posttraumatic growth. As the age range is between 18 and 65 in this sample, there is a necessity to take age variable as control to see how the expected relationships between variables may reveal without the impact of age. Controlling for their influence enables the regression model to be less confounded by residual factors.

This research proposes the following research questions and hypotheses:

Hypothesis 1: There is a positive relationship between posttraumatic stress and posttraumatic growth.

Hypothesis 2: Posttraumatic growth is associated negatively with loss, death anxiety, and intolerance of uncertainty.

Hypothesis 3: Posttraumatic growth is associated positively with meaning in life.

Hypothesis 4: Posttraumatic stress, intolerance of uncertainty, loss, death anxiety, and meaning in life will predict posttraumatic growth.

CHAPTER 2

METHOD

2.1 Participants

In the current study, there were 420 participants with 31.7% (*n*= 133) male and 68.3% (*n*= 287) female distribution. The age of our participants ranges between 18 and 65 (*M*= 42.09, *SD*= 14.196) due to the inclusion criteria. There were no participants excluded from the study. Socio-demographic data regarding the sample will be presented briefly and all the sociodemographic information can be found in Table 2.1.

Table 2.1

Sociodemographic Characteristics of Participants

Variables	*N*	%	*M*	*SD*
Age	420		42.09	14.2
Gender	420			
Male	133	31.7		
Female	287	68.3		
Education Status	420			
Literate	1	.2		
Primary/Secondary School	9	2.1		
Highschool	71	16.9		
University	231	55		
Postgraduate	108	25.7		
Work Status	420			
Student	52	12.4		
Unemployed	44	10.5		
Irregular Job	16	3.8		
Regular Job	159	37.9		
Self-employed	47	11.2		
Retired	102	24.3		
Marital Status	420			

Table 2.1 (cont'd)

Variables	N	%	M	SD
Single	127	30.2		
In a relationship	54	12.9		
Married	196	46.7		
Divorced	36	8.6		
Widowed	7	1.7		
Household	420			
Alone	75	17.9		
With family	110	26.2		
With spouse/children	209	49.8		
With someone else	26	6.2		
Chronic Disease	420			
Yes	110	26.2		
No	310	73.8		
Psychological Disorder	420			
Yes	33	7.9		
No	387	92.1		
History of COVID-19	420			
Yes	120	28.6		
No	300	71.4		
Severity of COVID-19	120			
Not severe at all	24	5.7		
Slightly severe	31	7.4		
Moderately severe	43	10.2		
Very severe	16	3.8		
Extremely severe	6	1.4		
History of Loss During COVID-19	420			
Yes	257	61.2		
No	163	38.8		
Experienced Loss	420			
Low	225	53.6		
High	195	46.4		
Influence of Loss	249			
Low	43	10.2		

Table 2.1 (cont'd)

Variables	N	%	M	SD
High	206	49		
Experienced Gain	420			
Low	270	64.3		
High	150	35.7		
Influence of Gain	199			
Low	101	24		
High	98	23.3		
Perceived Religiosity	420			
Low	156	37.1		
High	264	62.9		

2.2 Instruments

2.2.1 Socio-demographic information form. Socio-demographic form aims to gather general social and demographic information. This form is developed by the researcher to measure age, gender, education, working status, marital status, whom participants live with, chronic disease history, and psychiatric diagnosis. In addition to those, participants are asked whether they had COVID-19 diagnosis and the severity of their COVID-19 history. Participants also answered a question that assesses the perceived strength of their belief in religion. Lastly, participants are asked about the extent of losses and gains (friend, family, child, job, money, meaning in life etc.) that they experienced during the pandemic and how much they were influenced by it.

2.2.2 Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997). Impact of Event Scale is developed by Horowitz et al. (1979), which aims to measure stress levels of participants who experienced traumatic experiences of any kind. The original scale measures two symptom clusters of PTSD, which are avoidance and intrusion. The IES-R is developed by Weiss and Marmar (1997) as a revised version with 3 factor structures: intrusion, hyperarousal, and avoidance. This scale is widely used with clinical and general population to measure posttraumatic stress symptoms.

IES-R consists of 22 items and is scored by 5-point Likert scale ranging from 0 to 4. Answers are coded as (0) none, (1) mild, (2) moderate, (3) severe, and (4) very severe. The revised 3 factor structure consists of "intrusion" (1, 2, 3, 6, 9, 14, 16, 20), "avoidance" (5, 7, 8, 11, 12, 13, 17, 22), and "hyperarousal" (4, 10, 15, 18, 19, 21).

The Turkish version of Impact of Event Scale is named as "Olayların Etkisi Ölçeği-Gözden Geçerilmiş Form". Reliability and validity study in conducted by Çorapçıoğlu et al. (2006), comparing 104 subjects with PTSD diagnosis and 65 without PTSD diagnosis. Çorapçıoğlu et al. (2006) state that cut-off scores are found to have best specificity and sensitivity (both above 70%) when taken between 24-33. However, depending on the nature of the study, it is advised to shift the cut-off score accordingly. Yargıç et al. (2004) had the cut-off score of 24 in a field study conducted with witness of 1999 earthquake. They also suggested to take cut-off score as 30 rather than 33 in Turkish population. Total score that can be gathered from the scale ranges from 0 to 88. Cronbach alpha score in Turkish form indicated high internal consistency of 0.94, which is very close to the original scale score of 0.96. Overall, these results indicate the Turkish form of IES-R to be a reliable and valid measurement of posttraumatic stress in Turkish population.

In this study, "during the past seven days" notion was removed, and response options were presented from 1 to 5, rather than 0 to 4. Instructions and some items are changed by "pandemic" to point out the specific stressor of the pandemic rather than any stressful "event" the participant may recall. For this study, internal consistency results show that the scale has an alpha value of .925 for the total scale, .89 for intrusion, .78 for avoidance, and .84 for hyperarousal subscale.

2.2.3 Meaning in Life Questionnaire (MLQ; Steger et al., 2006). Meaning in Life Questionnaire is developed by Steger et al. (2006) as a tool to measure meaning in life. The scale consists of 10 items and two subscales. First subscale is the "existing meaning in life" consisting of 5 items (1, 4, 5, 6, 9) and the second one is the "search for meaning in life" consisting of 5 items (2, 3, 7, 8, 10). The 9th item is reverse coded. Answers are coded on a 7-point Likert scale ranging from 1 (Absolutely untrue) to 7 (Absolutely true). Reliability coefficients for subscales are

found as .82 and .87 respectively for existing meaning in life and search for meaning in life subscales in the original form. After 4 weeks, test-retest reliability coefficients were found as .70 and .73.

Demirdağ and Kalafat (2015) developed the Turkish form, known as Yaşamın Anlamı Ölçeği (YAÖ). They conducted the study on 322 teacher candidates. Internal consistency reliability results were found as .81 and .85 respectively. Test-retest results show reliability of .72 and .76. For this study, internal consistency of .715 is found for the total scale, .86 for existing meaning, and .92 for search for meaning subscale.

Maximum score for each subscale is 35 points and maximum overall score for the scale is 70. Higher scores in each subscale indicate higher search for meaning in life and higher presence of meaning in life. There are no official cut-off points for the scale.

2.2.4 Turkish Death Anxiety Scale (TDAS). Sarıkaya and Baloğlu (2016) developed TDAS with an effort to measure death anxiety in the Turkish population, as death is a culturally sensitive topic. Researchers developed TDAS to create a culturally relevant and psychometrically sound measure of death anxiety. Initial TDAS items were (n=87) distributed to 943 college students. Later, revised and reduced (n=36) when given to the second sample of 406 college students. Third sample (n=388) received revised items (n=20) within 2-week intervals and all the analyses were conducted on this final sample and form. TDAS consists of 20 items scored on a 5-point Likert scale ranging from 0 (never) to 4 (always). The scale consists of 20 items with 3 subscales named as "Ambiguity of death" (1, 2, 3, 4, 5, 6, 7, 8, 9, 10), "Exposure to death" (11, 12, 13, 14, 15, 16, 17), and "Agony of death" (18, 19, 20).

Cronbach alpha coefficient was .92 for ambiguity of death, .89 for exposure to death, and .72 for agony of death in the adult sample, with a total score of .95 overall. Split-half coefficient was .92 for the scale and the two-week test-retest reliability coefficient is found to be .83 for the total scale (.80, .82, and .93 for

subscales respectively). Overall, TDAS is found to be a reliable and valid measure of death anxiety for the native Turkish speakers. For this study, internal consistency is found .96 for the total scale, .95 for ambiguity of death, .95 for exposure to death, and .82 for agony of death subscale.

Higher scores indicate higher death anxiety and there are no reverse coded items in the scale. Range of possible scores are from 0 to 80. Cut-off scores are as follows: 0-7 (very low-level anxiety), 8-25 (low level anxiety), 26-44 (moderate-level anxiety), 45-63 (high-level anxiety), and 64-80 (very high-level anxiety).

2.2.5 Intolerance of Uncertainty Scale (IUS-12; Carleton et al., 2007). The short version of Intolerance of Uncertainty Scale (IUS-12) is developed by Carleton et al. (2007) as a means for measuring anxiety towards uncertainty and ambiguity. The original form of the longer version is developed by Freeston et al. (1994), consisting of 27 items. The IUS-12 is answered on a 5-point Likert scale ranging from 1 (Not at all characteristic of me) to 5 (Entirely characteristic of me). IU consists of 12 items, and two subscales of "prospective anxiety" (1-7 items) and "inhibitory anxiety" (8-12 items). The Cronbach alpha internal consistency coefficient is .91 for normal population and .92 for clinical population. The correlation between the scale and original scale is calculated as r= .96.

Sarıçam et al. (2014) conducted the reliability and validity study for the Turkish form of IU-12, known as BTÖ-12 on 593 university students. Cronbach alpha internal consistency coefficient is calculated as .88 for the scale, .84 for prospective anxiety, and .77 for inhibitory anxiety subscale. Test-retest after 28-day period shows total correlation of .88 for the whole scale, .75 for prospective anxiety, and .71 for inhibitory anxiety subscale. Overall, the Turkish version of IUS-12 is a reliable and valid measurement tool for intolerance of uncertainty in the Turkish population. For this study, internal consistency is found as .91 for the total scale, .84 for prospective anxiety, and .90 for inhibitory anxiety subscale.

Total score that a participant can get ranges from 12 to 60. There are no reverse coded items in the scale. Both subscales and total score can be calculated, while higher scores indicate higher intolerance of uncertainty.

2.2.6 Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996).
Posttraumatic Growth Inventory (PTGI) is developed by Tedeschi and Calhoun (1996) as a measurement to assess psychological growth people experience after traumatic events. It has 21 items and 5 subscales which are: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. According to Tedeschi and Calhoun (2004), greater appreciation in life means that the priorities and attributed importance of things in life changes for the person. Things that are smaller or taken for granted in life can be sensed as more important while individual acknowledges the unpredictability of life and vulnerability of oneself. Closer and more intimate relationships are another component that usually occur after a loss of relationship or a person. People report they value the people around them more and see who matters for them as they self-disclose and seek support. Personal strength is another domain of growth where the person acknowledges that bad things happen and expresses increased belief in their capability of dealing with adversities. Another growth area is that people can see new paths and possibilities in life as they deal with their suffering. For instance, a trauma survivor can work for other trauma survivors. Lastly, religious and spiritual changes occur when people deal with existential questions and draw religious or spiritual meaning out of those experiences.

The scale has been tested with highly stressful events such as chronic illness, loss of loved ones, and rape. Items are rated on a 6-point Likert scale ranging from 0 (I did not experience this change at all) to 5 (I experienced this change to a very great degree). Internal consistency is 0.90 and ranging from 0.67 to 0.85 for subscales.

Kağan et al. (2012) tested the Turkish adaptation of the scale "Travma Sonrası Büyüme Envanteri" (TSBÖ) on 723 volunteers from undergraduate studies and high schools. Three factor structure accounted for 64% of the total variance. Three factors in the Turkish form were: "Changes in Self-Perception", "Changes in Philosophy of Life", and "Changes in Relationship". Internal consistency for each subscale were

0.88, 0.78 and 0.77 for each subscale respectively, with 0.92 for overall items. For this study, internal consistency is found to be .96 for the total scale, .94 for self-perception, .86 for philosophy of life, and .89 for relationships subscale.

As factor structures differ between English and Turkish versions of the scale, calculations for each subscale are presented separately for each scale. Five factors and their items are as follows: relating to others (item 6, 8, 9, 15, 16, 20, 21), new possibilities (3, 7, 11, 14, 17), personal strength (4, 10, 12, 19), spiritual change (5, 18), and appreciation of life (1, 2, 13). In the Turkish form, item distribution for each subscale are as follows: changes in self-perception (5, 10, 11, 12, 13, 15, 16, 17, 18, 19), changes in philosophy of life (1, 2, 3, 4, 7, 14), and changes in relationship (6, 8, 9, 20, 21). Overall, TSBÖ is found to be a reliable and valid measurement for posttraumatic growth in the Turkish population.

Instructions are changed to "pandemic" to measure changes associated with the pandemic. The overall score a participant can get ranges from 0 to 105 and each subscale can be calculated separately. Higher scores indicate higher positive changes in the aftermath of trauma.

2.2.7 Perceived religiosity. As a control variable, perceived religiosity was measured to understand how participants score their religiosity on a scale from 1 to 5. An item which asks how participants perceive their religiosity was utilized as a measurement. Answers are coded as (1) not religious at all, (2) slightly religious, (3) moderately religious, (4) very religious, and (5) extremely religious. Higher scores indicate higher perceived religiosity. In this study, perceptions of low versus high religiosity were assigned to each participant based on their scores and the mean score of perceived religiosity data.

2.2.8 Loss. As most of the scales associated with loss tend to focus on loss of a loved one, this study measured loss by two items rather than a standardized scale. In order to measure the amount and impact of experiences of loss during the pandemic, two items were introduced to all of the participants. Participants were asked to express their perceived amount of loss experienced during the pandemic and how

much they were influenced by these losses on a scale from 1 to 5. Higher scores indicate higher perceived loss and higher impact of loss on the participant. In our study, loss experience was not restricted to a specific type of loss but rather included loss of a loved one, material, values, spirituality, social roles, and so on. Two levels of low versus high severity and impact of loss that is experienced during the pandemic were assigned to each participant based on their scores to ensure a better statistical power.

2.3 Procedure

Instruments for data collection are determined and approvals to use each scale and questionnaire are granted from the authors. Following the approval from the Ethical Committee of Bahçeşehir University (see Appendix H), the Google Forms questionnaire is finalized and distributed through online channels. Convenience sampling was chosen to gather data more efficiently during the ongoing pandemic. Data collection started on 10th of January and finalized on 28th of February.

Informed consent (Appendix A), socio-demographic form (Appendix B) and other measurements are given to participants. Participants were recruited based on volunteerism and any questions regarding the study were responded through email. It took 10-20 minutes for participants to complete the survey.

Participants of our study completed a demographic information form at the beginning of the survey. They proceeded with Impact of Event Scale (Appendix C) that aims to understand the stress levels related with the pandemic, Meaning in Life Questionnaire (Appendix D) to measure their perception of the meaning their lives have, Turkish Death Anxiety Scale (Appendix E) to measure their anxiety regarding death, Intolerance of Uncertainty Scale (Appendix F) to understand how they perceive situations that are uncertain, and Posttraumatic Growth Inventory (Appendix G) to measure the positive changes they experienced during the pandemic.

CHAPTER 3
RESULTS

3.1 Data Screening

Accuracy of data entry is controlled via checking possible score ranges for each measurement and missing values are monitored. As missing values were less than 5% of our sample, it was decided to keep them in the data. Additionally, all the missing values were in the demographic form (influence of losses and influence of gains questions) and do not belong to any questionnaire.

Univariate outliers in independent and dependent variables were checked via skewness and kurtosis values and the values were within acceptable ranges. Mahalanobis distance was utilized to screen multivariate outliers. Linearity and normality assumptions were controlled with scatterplot matrix, skewness, kurtosis, and normal curves. Highest linearity was found between meaning in life and posttraumatic stress, intolerance of uncertainty and posttraumatic stress, intolerance of uncertainty and death anxiety, and posttraumatic stress and death anxiety. Homoscedasticity assumption was checked by scatterplot matrix for both predictors and the predicted variable. Regression and residual plots were utilized to check assumptions and they were within normal ranges. Multicollinearity assumption was tested by collinearity diagnostics and correlation analysis and there was no multicollinearity between predictor variables. Bivariate correlations of predictors and predicted variable can be seen in Table 3.2.

Regarding the sample size, a minimum of 20 participants for each variable is advised. In this case, there are 5 predictors and 1 predicted variable, requiring at least 120 participants. As there are 420 participants, sample size is considered to be sufficient for this particular study design.

3.2 Descriptive Statistics

To determine descriptive statistics of the measurements, mean, standard deviation, minimum and maximum scores were computed. Impact of Event Scale (M= 24.56, SD= 16.45), Meaning in Life Questionnaire (M= 43.94, SD= 10.49), Turkish Death Anxiety Scale (M= 26.57, SD= 18.65), Intolerance of Uncertainty Scale (M= 41, SD= 10.45), Posttraumatic Growth Inventory (M= 46.25, SD= 27.37), and loss (M= 4.56, SD= 3.29) have descriptive statistics as mentioned. Descriptive statistics of scales and subscales are presented in Table 3.1.

Table 3.1

Descriptive Statistics for Scales and Subscales

Variables	N	Min	Max	M	SD
IES Total	420	0	88	24.56	16.45
Intrusion Subscale	420	0	32	7.68	6.71
Avoidance Subscale	420	0	32	10.31	6.23
Hyperarousal Subscale	420	0	24	6.57	5.58
MLQ Total	420	10	70	43.94	10.49
Existing Meaning in Life Subscale	420	5	35	24.57	7.66
Search for Meaning in Life Subscale	420	5	35	19.37	8.9
TDAS Total	420	0	80	26.57	18.65
Ambiguity of Death Subscale	420	0	40	12.24	10.3
Exposure to Death Subscale	420	0	28	9.06	7.66
Agony of Death Subscale	420	0	12	5.27	3.2
IU Total	420	12	60	41	10.45
Prospective Anxiety Subscale	420	7	35	24.78	5.97
Inhibitory Anxiety Subscale	420	5	25	16.21	5.51
PTG Total	420	0	105	46.25	27.37
Changes in Self-Perception Subscale	420	0	50	23.32	14.29
Changes in Philosophy of Life Subscale	420	0	30	13.9	7.82
Changes in Relationships Subscale	420	0	25	9.04	6.91
Loss Total	420	1	10	4.56	3.29
Experienced Loss	420	1	5	2.43	1.41
Influence of Loss	249	1	5	3.59	1.11
Perceived Religiosity	420	1	5	2.93	1.35

Even though most of the scales don't have any predetermined cutoff values and they are not utilized in this study to separate or exclude any groups in particular, death anxiety and posttraumatic stress measurements have cutoff values originally. Death anxiety scores show that 14.5% of our participants score very low death anxiety, 40% low death anxiety, 27.2% moderate death anxiety, 13.1% high death anxiety, and 5.2% very high death anxiety. Regarding posttraumatic stress, Çorapçıoğlu et al. (2006) report that Impact of Event scale has high specificity and sensitivity when cutoff score is taken between 24-33. Scores above 24 is utilized by researchers in the field study of 1999 earthquake (Yargıç et al., 2004). In this study, 53.8% of participants scored below the cutoff of 24, 46.2% of participants scored above the score of 24. Furthermore, 27.4% of our participants scored over the cutoff score of 33. As stated by the researchers, these cutoff scores can be utilized to screen clinically prominent symptoms of PTSD. It is not the aim of this study to employ cutoff values. However, it is important to point out the prominent percentage of individuals suffering from death anxiety and posttraumatic stress symptoms.

3.3 Correlation Analysis

Bivariate correlations were tested by Pearson correlation analysis between and within subscales and total scores of our predictor and predicted variables. Main scales included predictor variables of Impact of Event Scale (IES), Meaning in Life Questionnaire (MLQ), Turkish Death Anxiety Scale (TDAS), loss, and predicted variable of Posttraumatic Growth Inventory (PTGI). Subscales included in the study are IES (Intrusion, Avoidance, and Hyperarousal), MLQ (Search for Meaning and Existing Meaning), TDAS (Ambiguity of Death, Exposure to Death, and Agony of Death), IU (Inhibitory Anxiety and Prospective Anxiety), and PTG (Changes in Self-Perception, Changes in Philosophy of Life, and Changes in Relationships). Additionally, control variables of perceived religiosity and age are included in the study.

Regarding our main variables, participants with higher posttraumatic stress (IES) were found to report higher meaning in life (r= .172, *p*< .01), death anxiety (r=.392, *p*< .01), intolerance of uncertainty (r= .427, *p*< .01), and posttraumatic growth (r= .273, *p*< .01). Participants with higher meaning in life are found to report higher death anxiety (r= .185, *p*< .01), intolerance of uncertainty (r= .153, *p*< .01), and posttraumatic growth (r= .426, *p*< .01). Participants with higher existing meaning in life reported lower posttraumatic stress (r= -.102, *p*< .05), search for meaning in life (r= -.204, *p*< .01), death anxiety (r= -.154, *p*< .01), intolerance of uncertainty (r= -.163, *p*< .01), and higher posttraumatic growth (r= .345, *p*< .01). Participants who reported higher search for meaning in life reported lower existing meaning in life (r= -204, *p*< .01), higher posttraumatic stress (r= .291, *p*< .01), death anxiety (r= .351, *p*< .01), intolerance of uncertainty (r= .321, *p*< .01), and posttraumatic growth (r= .205, *p*< .01). Participants who reported higher death anxiety were more likely to report higher intolerance of uncertainty (r= .383, *p*< .01) and posttraumatic growth (r= .426, *p*< .01). Participants with higher posttraumatic growth were more likely to report higher posttraumatic stress (r= .273, *p*< .01), meaning in life (r= .426, *p*< .01), death anxiety (r= .156, *p*< .01), and intolerance of uncertainty (r= .191, *p*< .01). Regarding age findings, younger participants are more likely to report higher meaning in life (r= .-.141, *p*< .01), lower existing meaning in life (r= .263, *p*< .01), higher search for meaning in life (r= -.393, *p*< .01), higher death anxiety (r= -.316, *p*< .01), and higher intolerance of uncertainty (r= -.185, *p*< .01) (See in Table 3.2). Further information of subscale correlations is displayed in Table 3.3.

Table 3.2

Pearson Correlation Coefficients Among All Variables

Variable	1	2	3	4	5	6	7	8
1. IES	1	.172**	-.102*	.291**	.392**	.427**	.273**	-.051
2. MLQ	.172**	1	.557**	.699**	.185**	.153**	.426**	-.141**
3. MLQ Existing	-.102*	.557**	1	-.204**	-.154**	-.163**	.345**	.263**
4. MLQ Search	.291**	.699**	-.204**	1	.351**	.321**	.205**	-.393**

Table 3.2 (cont'd)

Variable	1	2	3	4	5	6	7	8
5. TDAS	.392**	.185**	-.154**	.351**	1	.383**	.156**	-.316**
6. IU	.427**	.153**	-.163**	.321**	.383**	1	.191**	-.185**
7. PTG	.273**	.426**	.345**	.205**	.156**	.191**	1	-.005
8. Age	-.051	-.141**	.263**	-.393**	-.316**	-.185**	-.005	1

Note: IES Total: Impact of Event Scale total score; MLQ Total: Meaning in Life Questionnaire total score; MLQ Existing: Meaning in Life Questionnaire existing meaning subscale; MLQ Search: Meaning in Life Questionnaire search for meaning subscale; TDAS Total: Turkish Death Anxiety Scale total score; IU Total: Intolerance of Uncertainty Scale total score; PTG Total: Posttraumatic growth total score.

*p< .05, **p< .01.

Table 3.3

Pearson Correlation Coefficients Among All Subscales

Subscales	1	2	3	4	5	6	7	8	9	10	11	12	13
1. IES Intrusion	1												
2. IES Avoidance	.67**												
3. IES Hyperarousal	.79**	.59**											
4. MLQ Existing	-.03	-.00	-.26**										
5. MLQ Search	.26**	.19**	.33*	-2**									
6. TDAS Ambiguity	.28**	.23**	.31**	-.14**	.37**								
7. TDAS Exposure	.41**	.29**	.38**	-.10*	.23**	.62**							
8. TDAS Agony	.31**	.26**	.30**	-.18**	.30**	.69**	.58**						
9. IU Prospective	.33**	.29**	.40**	-.14**	.26**	.27**	.28**	.37**					
10. IU Inhibitory	.35*	.32**	.40**	-.15**	.32**	.32**	.33**	.37**	.66**				
11. PTG Self-perception	.29**	.26**	.1*	.34**	.2**	.01*	.19**	.11*	.21**	.13**			
12. PTG Philosophy	.28**	.24**	.12*	.31**	.19**	.1*	.15**	.07	.19**	.01*	.83**		
13. PTG Relationships	.32**	.3**	.13**	.31**	.18**	.1*	.19**	.13**	.2**	.12*	.85**	.75**	

Note: IES Intrusion: Impact of Event Scale intrusion subscale; IES Avoidance: Impact of Event Scale avoidance subscale; IES Hyperarousal: Impact of Event Scale hyperarousal subscale; MLQ Existing: Meaning in Life Questionnaire existing meaning subscale; MLQ Search: Meaning in Life Questionnaire search for meaning subscale; TDAS Ambiguity: Turkish Death Anxiety Scale ambiguity of death subscale; TDAS Exposure: Turkish Death Anxiety Scale exposure to death subscale; TDAS Agony: Turkish Death Anxiety Scale agony of death subscale; IU Prospective: Intolerance of Uncertainty Scale prospective anxiety subscale; IU Inhibitory: Intolerance of Uncertainty Scale inhibitory anxiety subscale; PTG Self-perception: Posttraumatic Growth Inventory changes in self-perception subscale; PTG Philosophy: Posttraumatic Growth Inventory changes in philosophy of life subscale; PTG Relationships: Posttraumatic Growth Inventory changes in relationships subscale.

$*p < .05, **p < .01.$

Influence of loss variable is not taken to the correlation and regression analyses as it limited the sample into 249 participants rather than the original sample of 420 people. This is due to the fact that people who have reported to experience no loss would be coded as missing values in the question that measures the influence of loss. Additionally, reduction in sample would be non-randomized and the sample of 249 participants would be a biased subsection of the whole sample, only consisting of participants who experienced loss.

The variable of "loss" is represented by the severity of loss that is experienced during the pandemic ranging from 1 to 5 (See in Table 2.1). Loss is then scored as low versus high for each participant which is calculated by the mean value of severity of loss.

Analyses of t-test show that participants with higher experience of loss report significantly higher posttraumatic stress, $t(418) = -5.71, p < .01$, higher intolerance of uncertainty, $t(418) = -2.35, p < .05$, and higher posttraumatic growth, $t(418) = -2.59$, $p = .01$. Participants with higher perceived religiosity reported significantly higher posttraumatic stress, $t(418) = -2.14, p < .05$, higher meaning in life, $t(418) = -3.61, p < .01$, higher death anxiety, $t(418) = -2.67, p < .01$, higher intolerance of uncertainty, $t(418) = -2.28, p < .05$, higher posttraumatic growth, $t(418) = -5.25, p < .01$, and higher existing meaning in life, $t(297) = -4.8, p < .01$.

Regarding linearity and curvilinearity between posttraumatic stress and posttraumatic growth, regression analyses show that linear regression model of $F(1,148) = 33.75$, $p< .01$ with R value of .273 and adjusted R value of .073 for predictor of posttraumatic stress and predicted variable of PTG. For the curvilinear relationship, $F(2,417)= 19.49$, $p< .01$ with R value of .292 and adjusted R value of .081 is found for predicted variable of PTG, predictors of posttraumatic stress with $p< .01$ and posttraumatic stress squared with $p< .05$. For the curvilinear model test, posttraumatic stress had partial correlation of .194 and posttraumatic stress squared had partial correlation value of -.11. Visual representation of linearity and curvilinearity between variables are presented in Figure 3.1. Based on these analyses, curvilinearity between posttraumatic stress and posttraumatic growth is not supported and the relationship is accepted to be linear. Therefore, Pearson correlation and multiple linear regression analyses are conducted with the assumption of linearity.

Figure 3.1

Linearity and Curvilinearity Between Posttraumatic Stress and Posttraumatic Growth
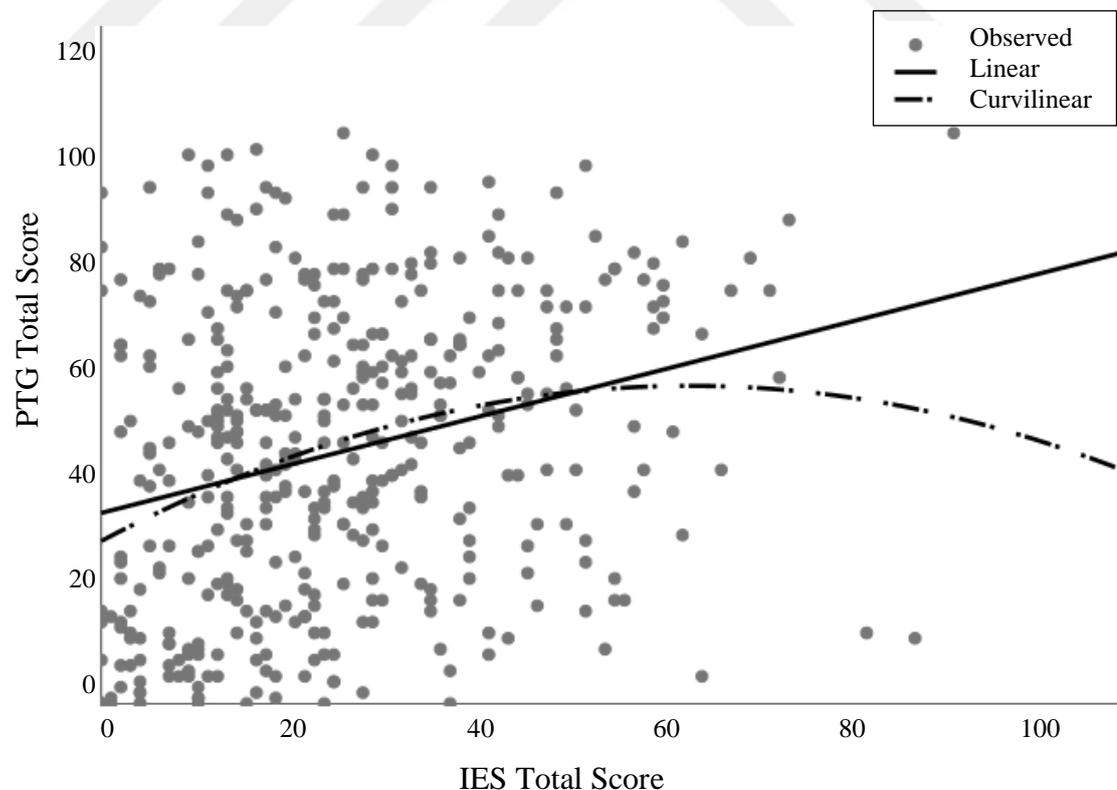
Note: IES Total: Impact of Event Scale total score; PTG Total: Posttraumatic growth total score

3.4 Regression Analyses

Multiple linear regression analysis was conducted to test the hypothesis that posttraumatic stress, meaning in life, death anxiety, intolerance of uncertainty, and loss predict posttraumatic growth. Since all of our predictor variables correlated with PTG significantly, all variables were included in the regression analysis as well.

Due to our hypothesis and aim of the study, posttraumatic growth, posttraumatic stress, intolerance of uncertainty, and death anxiety were taken by their total scores, rather than by their subscales. As seen in the literature review, these domains were usually not investigated separately in research. However, meaning in life variable is taken as two distinct subscales. Meaning in life consists of search for meaning and existing meaning subscales, which are negatively associated in the literature (M. F. Steger et al., 2006) and in this study. Therefore, we decided to see their unique contribution in predicting PTG. Some studies also report how different domains of meaning in life associates with mental health, psychopathology, and PTG. Therefore, our regression model consists of posttraumatic stress, death anxiety, intolerance of uncertainty, loss, search for meaning, and existing meaning in life as predictors. Our predicted variable is posttraumatic growth, with additional control variables of perceived religiosity and age.

Hierarchical multiple linear regression was conducted by enter method, with perceived religiosity and age as the control variables. In model 1, a significant regression equation was found for control variables of religiosity and age predicting posttraumatic growth $F(2,417)= 13.764$, $p< .01$ with an R^2 value of .062. Adjusted R^2 value of .057 suggests that 5.7% of variability in PTG is predicted by variability in religiosity and age. In model 2, a significant regression equation was found $F(8,411)= 20.71$, $p< .01$ for predictors of posttraumatic stress, loss, search for meaning in life, existing meaning in life, death anxiety, and intolerance of uncertainty. R^2 value of .287 and adjusted R^2 value of .274 is found. This indicates that 27.4% of variability in PTG is predicted by variability in posttraumatic stress, loss, search for meaning in life, existing meaning in life, death anxiety, and intolerance of uncertainty (See in Table 3.5). Regression model shows that existing

meaning in life (p< .01), search for meaning in life (p< .01), posttraumatic stress (p< .01), and loss (p< .05) predicted PTG significantly, whereas death anxiety, and intolerance of uncertainty did not predict PTG (See in Table 3.4).

Table 3.4

Regression Model for Predicting Posttraumatic Growth by Posttraumatic Stress, Existing Meaning in Life, Search for Meaning in Life and Loss

Model 1	Coefficients					Correlations	
Variable	*B*	*SE*	Beta	*t*	*p*	Partial	Part
Constant	24.24	5.9		4.11	.00		
Perceived Religiosity	14.08	2.68	.249	5.25	.00**	.25	.25
Model 2							
Constant	-36.22	9.04		-4	.00		
Posttraumatic Stress	.29	.084	.17	3.43	.00**	.17	.14
Loss	4.85	2.39	.09	2.03	.04*	.1	.08
Existing meaning	1.42	.16	.4	8.81	.00**	.4	.37
Search for meaning	.58	.15	.19	3.9	.00**	.19	.16

*p< .05, **p< .01.

Table 3.5

Model Summary

Model	*R*	R^2	Adjusted R^2	*SE*	R^2 Change	Sig. F Change
1	.249[a]	.062	.057	26.57	.062	.00
2	.536[b]	.287	.274	23.33	.225	.00

a. Predictors: (Constant), Perceived religiosity, Age

b. Predictors: (Constant), Posttraumatic stress, Search for meaning in life, Existing meaning in life, Loss, Intolerance of uncertainty, Death anxiety

CHAPTER 4
DISCUSSION

This study aimed to examine some of the individual and existential predictors of posttraumatic growth during the COVID-19 pandemic in Turkey. As the literature mostly focuses on the negative impacts of traumatic experiences, this study focuses on the potential growth that may be see during the pandemic and its contributing factors. It was specifically aimed to examine how posttraumatic growth can be predicted by posttraumatic stress, meaning in life, intolerance of uncertainty, death anxiety, and loss during the pandemic in Turkey. Understanding which predictors of PTG are crucial during the pandemic as certain protective and vulnerability factors can be derived from such studies. Understanding predictors of PTG may enable researchers, clinicians, and other mental health care practitioners to better understand and intervene during this potentially traumatic pandemic, as well as enable to cope with its implications for mental health in the aftermath of such crises in a timely manner. There were no studies to our knowledge that measured posttraumatic stress, posttraumatic growth, meaning in life, intolerance of uncertainty, death anxiety, and loss during the pandemic. This study is unique as predictors of the posttraumatic growth are selected by taking the unique characteristics of the pandemic into consideration, as well as by extensive research. As there are extensive and growing research on deteriorating mental health and the pandemic, we see a gap in the literature regarding how potentially protective factors and other vulnerability factors may associate with, and predict PTG. The results of this study will be shared and evaluated in the light of previous literature.

4.1 Prevalence

As stated in the previous section, death anxiety prevalence in our sample shows that 14.5% of our participants score very low death anxiety, 40% low death anxiety, 27.2% moderate death anxiety, 13.1% high death anxiety, and 5.2% very high death anxiety. If these results are categorized, 54.5% of our sample has low death anxiety, 27.2% have moderate, and 18.3 have high death anxiety scores. One study conducted during COVID-19 pandemic also reported 20% of the sample presenting high death

anxiety (Mirhosseini et al., 2021). In our sample, almost half of our participants report having moderate to high anxiety. In a study conducted in Turkey after two weeks the lockdown ended shows that 59% of the sample reports "sometimes" experiencing death anxiety", whereas around 21-33% of participants report "frequently" thinking of getting closer to death and fear of losing their lives. Our results show lower death anxiety rates, but the results seem to be comparable with one another. It should also be kept in mind that our research is taking place after 2 years the pandemic has started. Death anxiety may be diminishing by time as the pandemic is managed, vaccines are extensively utilized, and death rates slow down when compared to the higher mortality mutations that are seen in prior months. World Health Organization (2022b) also suggests that vaccines are crucial in reducing contractions, hospitalizations, death rates, and are helpful with managing the course of the pandemic. These advancements may be helpful in reducing the sense of uncertainty and uncontrollability people experience throughout the pandemic, as well as relieving the anxiety around death as the virus posits less risk of death with advancements in medicine research and practices of risk prevention. However, this explanation is just a hypothesis to be tested by further research.

Posttraumatic stress prevalence in our sample shows that 46.2% of participants scored above the cutoff score of 24. Furthermore, 27.4% of our participants scored over the cutoff score of 33, which is the more conservative and commonly used cutoff score to point out a likelihood of clinically significant PTSD symptomatology. In one study conducted in June 2021, 45.6% of adults scored over the cutoff of 33 (Northfield & Johnston, 2021). Another study conducted in 2020 in the U.S. shows that 26% of the general population experienced PTSS or PTSS during the COVID-19 pandemic (Hong et al., 2021). Similarly, 17.7% of normal population in Ireland fulfilled the PTSD diagnostic criteria in 2020 during the pandemic (Shevlin et al., 2020). Hence, our results are in alignment with the literature and may be indicative of the potentially prolonged impact of the pandemic on our sample due to its course or other unique characteristics.

It should be noted that Tedeschi and Calhoun haven't specified a cutoff value for the PTGI. Hallen and Godor (2022) report that 21% of their sample had moderate

level of posttraumatic growth with cutoff above 62, while only 3% had high growth over 84 during the pandemic in 2022. Another research conducted in June 2021 reported 33.4% of sample to show moderate growth (Northfield & Johnston, 2021). In our sample, 30.7% of participants had moderate growth according to that given cutoff, whereas 7.6% of participants had high growth. Based on another cutoff method of computing mean scores that are above 3, around 35% of our participants show moderate growth on changes in self-perception, around 31% on changes in philosophy in life, 20% on changes in relationships, and around 30% of our participants showed total growth score over the mean score of 3, indicating moderate to high growth. Therefore, our results are in alignment with the literature and showing similar prevalence rates, even after two years the COVID-19 pandemic has started.

4.2 Correlations

Religiosity is the control variable of our study as it was expected to be significantly associated with death anxiety, meaning in life, intolerance of uncertainty, and growth. Participants with higher religiosity report significantly higher posttraumatic stress, meaning in life, existing meaning in life, intolerance of uncertainty, death anxiety, and posttraumatic growth in this study. In general, more religious participants scored higher existing meaning in life, which is in alignment with the literature (Van Tongeren et al., 2017). It may be noteworthy that religious practices were restricted to prevent the spread of the virus during the previous stages of the pandemic, which may have an impact on how people cope with stress and how they relate to religion throughout the pandemic. Restrictive changes in religious rituals during the pandemic may have an impact on individuals and the way they convey meaning during the pandemic. However, it is not possible to interpret this result without conducting more research with correlational and causational inferences. Additionally, sense of injustice and experiences of loss may be detrimental for some people who experience any weakening or doubt regarding religious beliefs. Even though some research propose that religiosity may bring sense of control, hope, and predictability, it may also be that people who feel more uncertain, out of control, or distressed during the pandemic are more likely to seek

help from religious beliefs. Therefore, higher posttraumatic stress, intolerance of uncertainty, and existing meaning in life may be associated with seeking relief from religion to buffer the stress experienced during the pandemic associated partially with the intolerance of uncertainty and death anxiety. By these efforts, people may be enhancing their meaning in life and experiencing posttraumatic growth, aside from the stress they experience. In accordance with this explanation, Molteni et al. (2021) describes that some recent findings show a tendency of increase in religious activities such as prayers and internet searches during the pandemic. They existential insecurity theory describes the importance of personal, societal, and physical vulnerabilities as driving forces of religiosity. People might turn to religiosity in uncertain and dangerous times as it tends to provide certain answers, predictability, and sense of control over negative events. Additionally, religious beliefs and behaviors are considered to have positive role when coping with uncertainty, insecurity, and distress. Here, we can conceptualize religion as a coping strategy. Religiosity may also provide community ties, psychological support, comfort, and certainty (Molteni et al., 2021; Pino et al., 2022). On the other hand, as pandemic shakes the ground of normality our lives have, some people may be more inclined to question the unfairness of losses and sicknesses that are experienced during the pandemic or to experience doubt regarding religion. These doubts may be associated with meaning, justice, safety, or other related concepts a person associated with their religious beliefs. On the contrary, Molteni et al. (2021) describe that there may be an increase in religious endeavor during the pandemic as a coping source. If religiosity is a means for coping with distressing emotions experienced during the pandemic, it makes sense that we see higher posttraumatic stress, higher intolerance of uncertainty, higher death anxiety, and higher religiosity together. However, it may also mean that uncertainty tolerance, death anxiety, and posttraumatic stress is not alleviated to the point of relief as we manage to see a positive association between these variables. It is crucial to understand that there may be many other explanations and hypothesis regarding these results.

As the second control variable, age is not correlated with PTG significantly. In literature, many research point to a negative relationship between age and PTG. Tedeschi and Calhoun (2004) suggest that younger people are likely to have less life

lessons in their repertoire and less rigid schemas, enabling them to experience growth in the aftermath of a traumatic experience. However, this study doesn't show such a significant association. Results show that younger participants are more likely to experience lower existing meaning in life and higher search for meaning in life. These results are in alignment with the literature as younger generation may be more inclined to experience loss of meaning during the pandemic due to reasons such as disturbed routines of social, occupational, educational, and monetary aspects. During the pandemic, disruptions in goals, sense of insecurity, unpredictability, and uncontrollability of one's life and future may be impacting younger generations more than elderly. Research also suggests that younger ages are characterized by search of identity and what to pursue in life (Steger et al., 2009). Therefore, results that reveal higher search for meaning in life and lower presence of meaning in life in younger participants is meaningful under these assumptions and circumstances. As supported by the literature, death anxiety is found to be higher in younger participants, which may be associated with not coming in terms with the fear of death, not having present coping methods to deal with death, being more open to admit the fear around death, or being less religious than older participants. Here, religiosity may provide a relief regarding the anxiety around death (Krause et al., 2018; Mirhosseini et al., 2021; Russac et al., 2007). Younger participants also reported higher intolerance of uncertainty, which may be related to having less coping strategies and life experiences than older population to cope with the uncertainty (Pak et al., 2021). Additionally, pandemic may be impacting the normal routine of life the younger generation has more than the older generation. Due to the responsibilities, goals, occupation, education, and other aspects of life that are impacted by the pandemic negatively, younger generation may be more vulnerable to experience anxiety around the uncertainty.

Posttraumatic stress is significantly and positively associated with posttraumatic growth, which is in alignment with our first hypothesis and the literature. Similarly, all the subscales of each construct also significantly correlated. Coexistence of positive and negative traumatic reactions is mentioned in the literature as results usually reveal presence of distress and growth simultaneously (Shakespeare-Finch & Lurie-Beck, 2014; Yan et al., 2021), while acknowledging the

importance of distress for growth to occur (Tedeschi & Calhoun, 2004). Regarding curvilinearity, even though the relationship fits in the statistical model of curvilinearity and linearity significantly, curvilinearity of the relationship is not supported in Figure 3.1. Therefore, the relationship is acknowledged to be linear according to the results. In the literature, growth is usually expected to increase until distress threshold is reached, which is usually expected to be followed by a decrease in growth (Joseph et al., 2012; Karaman et al., 2021; Shakespeare-Finch & Lurie-Beck, 2014). As the potential fuel for growth, posttraumatic stress is considered to coexist with growth, while decrease in stress may also be followed in the aftermath of the growth process. As described by Tedeschi and Calhoun (2004), posttraumatic stress may be expected to accompany the process of posttraumatic growth as the individual ruminates about the traumatic event, engages with it emotionally and cognitively, and trying to make sense of it. Even though this research didn't measure any coping strategies, "avoidance" symptoms are measured as a subscale of posttraumatic stress. In addition to intrusion and hyperarousal, avoidance is also associated significantly and positively with PTG in our study. This is also supported by previous research (Kunz et al., 2018) as emotion-focused, problem-focused coping (Linley & Joseph, 2004) in addition to approach and avoidance-oriented coping were found to be related to PTG. It is indicated that different strategies may be useful in different stages of growth process (Kunz et al., 2018). As discussed by Joseph and Linley (2005), after the traumatic and existential injury, individuals tend to integrate the new traumatic experience into their schemas, which is accompanied by intrusive and avoidant symptoms of PTSD. Intrusion and avoidance may therefore indicate an effort to process the new trauma-related information emotionally and cognitively, which usually generates increased amount of distress and arousal as well.

In the literature, meaning is consistently found to be associated with better psychological well-being, lower distress, and lower PTSS (De Jong et al., 2020; Martela & Steger, 2016; Schnell & Krampe, 2020). Meaningfulness is found to be moderating the relationship between stressors and distress such as medical diseases and trauma (Schnell & Krampe, 2020). In this study, correlational analysis revealed that that there is significant and positive relationship between posttraumatic stress

and meaning in life, even though a negative relationship was expected. As known, meaning in life consists of both search for meaning and existing meaning in life. Results show that there is negative and significant relationship between search for meaning and existing meaning in life. This result is in alignment with the literature (M. F. Steger et al., 2006). Subscales of posttraumatic stress were associated positively and significantly with search for meaning in life, whereas negatively with existing meaning in life. It was also supported in the literature that presence of meaning is associated negatively PTSS and distress (De Jong et al., 2020; Schnell & Krampe, 2020). Therefore, even though the overall construct of meaning in life associated differently with PTSD symptoms in our study, all the subscales of meaning in life seems to be associated with the measurement of posttraumatic stress as expected and supported by the literature.

As expected, posttraumatic stress and death anxiety was positively and significantly associated. Subscales of each construct were also positively and significantly associated. Previous research also shows that death anxiety and measures of psychopathology such as anxiety, depression, and distress are strongly correlated (Menzies et al., 2019). The directionality of the relationship cannot be inferred from our results and there may be a bidirectional relationship between these two constructs as well.

Posttraumatic stress is significantly and positively associated with intolerance of uncertainty. Also, subscales of intrusion, avoidance, and hyperarousal are also associated significantly and positively with prospective and inhibitory anxiety subscales. In literature, intolerance of uncertainty as a transdiagnostic factor is consistently associated with variety of mental health issues including stress, anxiety, GAD, sleep disturbances, depression, and posttraumatic stress symptoms (Çelik et al., 2021). Other research show that intolerance of uncertainty is associated positively with distress and negatively with mental well-being (Bakioğlu et al., 2020; Satici et al., 2020). Responses given to uncertainty usually associate with neuroticism, negative emotions, and inability to handle distressing situations. As the pandemic fluctuates and lasts for more than two years, the uncertainty tolerance and posttraumatic stress may be exceeding the threshold as well. Due to the constant

focus on uncertainty, individuals who are intolerant of uncertainty may be at more risk of developing negative outcomes that are detrimental for mental health (Kruglanski et al., 2021). On the contrary, people who desire change and perceive uncertainty as a challenge more than a threat may enjoy uncertain situations and adaptations (Sarry et al., 2021). Also, over-engagement and under-engagement responses that can be given to uncertainty may be associated with hyperarousal and intrusion respectively.

Participants with high loss scores reported significantly higher on posttraumatic stress and its subscales than participants with low loss scores, which is in alignment with the literature and our predictions. Losing someone or something of importance (freedom, happiness, normalcy, livelihood, health, job, money etc.) is a major source of stressor that is found to be detrimental for mental and physical health of individuals (Zhai & Du, 2020). Multiple losses taking place during the pandemic are expected to be sources of distress for many people due to lack of predictability, social support, mourning rituals, stability, physical contact, and many other factors in the face of losing loved ones or resources mentioned above (Menzies et al., 2020). Additionally, directionality of this relationship might also be explained by perceiving more loss and getting influenced by losses more when posttraumatic stress levels are already higher. Therefore, directionality of the relationship may be discussed and hypothesized by variety of explanations.

Meaning in life is positively and significantly associated with death anxiety, even though a negative relationship was expected. More specifically, search for meaning is associated positively and significantly with all subscales of death anxiety, whereas existing meaning in life is negatively and significantly associated with all subscales of death anxiety, which is in alignment with our predictions. There is usually a negative relationship reported between meaning in life and death anxiety in the literature (Cox et al., 2021; Menzies et al., 2019). However, when subscales are considered, the expected relationship occurs between two constructs. As also reported in the literature, maintenance of meaning is reported to reduce death anxiety and that increase in death anxiety is usually followed by an increased effort to maintain meaning one's life has (Cox et al., 2021; Van Tongeren & Green, 2018).

Therefore, people with high existing meaning in life may be less prone to experience anxiety over death, whereas people who are searching for meaning in life more than having an existing meaning in life more may be more prone to be anxious over death and struggling with maintaining a meaning in life. However, it could also be the case that when death anxiety is higher, people start to search for a meaning in life rather than defending their existing meaning in life. Therefore, our results don't seem to support the view that people defend their existing meaning in life and report having higher existing meaning in life when faced with death anxiety. According to Yalom (2008), building meaningful relationships or leaving a positive legacy may also be adaptive ways of coping with the anxiety of death. Paradoxically, one research also found that higher meaning in life is associated with higher death anxiety. This may indicate that when life is perceived as valuable, there may be more to lose against death (Van Tongeren & Green, 2018). It should be also noted that when faced with a threat, people are likely to defend their meaning to combat meaninglessness and report their lives as meaningful, even though such association is not supported by and possible to be inferred from our results (Van Tongeren & Green, 2010).

Meaning in life is positively and significantly associated with intolerance of uncertainty, even though a negative relationship was expected. More specifically, existing meaning in life is negatively and significantly associated with prospective and inhibitory anxiety subscales, whereas search for meaning in life is positively and significantly associated with inhibitory and prospective anxiety subscales, as expected. When faced with uncertainty and mortality, individuals usually seek meaning to buffer against their anxiety (De Jong et al., 2020; Martela & Steger, 2016). Therefore, search for meaning increases in the face of uncertainty, which may in turn reduce the uncertainty if meaning is derived out of the situation. When meaning is present or found, it is expected that uncertainty tolerance is higher, and person is more resilient in the face of potential stressors. Overall, it can be said that humans seek meaning and understanding when faced with uncertainty, absurdity, or chaos (Wong, 2010). Hence, participants who are intolerant of uncertainty may be more in need of explanation and meaning to buffer the anxiety they feel. Therefore, even though the overall construct of meaning in life association was the opposite of

what was expected, the subscales of meaning in life seems to be associating with intolerance of uncertainty just as expected.

As hypothesized, meaning in life is positively and significantly associated with posttraumatic growth. More specifically, both existing meaning in life and search for meaning in life are positively and significantly correlated with subscales of posttraumatic growth. It is stated that search for meaning may be an indication of meaning making efforts that haven't yield to a result yet and that the assumptive world is still "shattered". It may often mean that the struggle is ongoing and search for meaning is usually associated with negative changes. On the other hand, presence of meaning is often associated with new schema construction, less psychopathology, and positive changes (Linley & Joseph, 2011; Schnell & Krampe, 2020). Therefore, search for meaning in the face of a traumatic event may be followed up by reconstruction of new schemas and meaning, aided by cognitive and emotional engagement and processing. This process may lead to PTG according to Tedeschi and Calhoun (2004). Therefore, results are in alignment with the functional-descriptive model of PTG, as shattered assumptions and loss of meaning is followed by a search for meaning, which may eventually result with reconstruction of a new meaning.

Death anxiety is significantly and positively correlated with intolerance of uncertainty, which is in alignment with our predictions. Subscales were also positively and significantly correlated. During an uncertain era where mortality is reminded to individuals daily by death tolls, face masks, news, and through many other credible and uncredible channels, intolerance of uncertainty and death anxiety may feed each other reciprocally. Tolerance of uncertainty may buffer against the fear and anxiety towards death. However, when death is hard to control and avoid, anxiety around the unpredictability and uncontrollability of pandemic can be a source of stress. Due to the unprecedented, invisible, and unknown nature of the virus and its impacts on individuals, a lot of uncertainty may arise regarding how to behave, get protected, take precaution, socialize, transport, survive, and so on (Palitsky et al., 2021).

As expected, results show that participants with higher loss scores reported significantly higher intolerance of uncertainty. More specifically, participants with high experience of loss reported significantly higher prospective anxiety, whereas there were no significant differences found for inhibitory anxiety. Experiencing loss during the pandemic may trigger uneasiness and anxiety around the uncertainty. People who experience loss may guide their attention to potential uncertainty and threat that will happen in the future more with an effort to control and predict potential harm. Additionally, people who perceive that they have a lot of loss that impacted them negatively, may be more prone to have lower tolerance of uncertainty, which may make them candidates for perceiving more losses in the face of uncertainty or drawbacks. Sarry et al. (2021) suggest that intolerance of uncertainty is associated with less positivity and higher depression. Uncertainty is often met by reactions of sadness, fear, anxiety, loneliness, and depression. According to that, losses experienced during the pandemic may be perceived more negative and severe. However, experience of loss may also be triggering intolerance towards uncertainty as well.

Intolerance of uncertainty is positively and significantly correlated with posttraumatic growth, even though our prediction was a negative relationship. Subscales of prospective and inhibitory anxiety were also significantly and positively correlated with subscales of PTG. It was hypothesized that even though uncertainty, shattered assumptions, and highly distressing event is the fuel for growth to occur, high intolerance of uncertainty may evoke more distress than growth-oriented processing. However, for growth to take place, there needs to be a strong stressor. When uncertainty is not tolerated well, anxiety may be harder to buffer against. In the presence of a strong stressor and shattered assumptions, individual may feel lost and anxious due to the unpredictability and uncontrollability of the pandemic. In turn, this process may trigger growth. Furthermore, it is possible to report more growth in the face of highly distressing situations as a coping mechanism. However, this pattern may be an indication of illusory growth, rather than a constructive and real growth.

Death anxiety is significantly and positively correlated with posttraumatic growth even though a negative relationship was expected. Posttraumatic growth can be associated with events that are stressful for an individual to cope with. There is a wide array of events that can work as a catalyst for posttraumatic growth such as medical conditions, disasters, and life experiences (Joseph et al., 2012). During the pandemic, death anxiety may be one of the major stressor people have to deal with daily. Therefore, distress and anxiety are expected to be associated with growth in the literature as well. Our prediction is that death anxiety may be the fuel for PTG, rather than the other way around. Therefore, our prediction that high anxiety over death is detrimental for PTG is not supported in this study, as the opposite is observed.

Even though the opposite was expected, participants with high loss scores report significantly higher on posttraumatic growth. As it was mentioned earlier, stressors such as bereavement, natural disasters, medical disorders, interpersonal problems, and many other types of stressors can be a source of distress and growth (Joseph et al., 2012). Previous research proposes that adverse childhood experiences, greater distress levels, PTSD symptoms, and knowing someone who died from COVID-19 are linked to PTG (Cheng & Liu, 2021; Na et al., 2021). Research shows that losing someone or something significant can accompany PTG (Eisma et al., 2019). As the type of loss in this study was not specified, loss may be related to a person, identity, social role, money, feeling, or anything else. Results are in alignment with the view that negative experiences such as losses might be transformed into positive experiences (Jans-Beken, 2021).

Even though loss, intolerance of uncertainty, and death anxiety were expected to be negatively associated with PTG, results of this study showed otherwise. This was mainly attributed to the nature of posttraumatic growth. As growth was associated with both positive and negative concepts with respect to their adaptiveness and functionality, it became trickier to predict the relationships between PTG and other variables. For instance, optimism, openness to experience, agreeableness, conscientiousness, emotional stability, adaptive coping strategies can be associated with PTG (Joseph et al., 2012; Linley & Joseph, 2004; Tedeschi & Calhoun, 2004).

However, even though they may have potentially dysfunctional attributes, it turns out that intolerance of uncertainty, death anxiety, loss, and posttraumatic stress may also be associated positively with PTG. Thus, our results are in alignment with the view regarding the complexity of human experience and coexistence of negative and positive emotions (Israelashvili, 2021). Furthermore, it should be also noted that coexistence of distress and PTG is expected. Additionally, growth doesn't grant any reduction in distress (Tedeschi & Calhoun, 2004), while well-being is considered to be the sum of both positive and negative emotions according to existential positive psychology. Even though growth doesn't indicate the absence of distressing emotions, growth may be followed by a decrease in distressing emotions as a result of meaning making process, emotional and cognitive engagement with the traumatic event, seeking social support, self-disclosure, and development of a narrative that consists of the traumatic event. Our results show that death anxiety and intolerance of uncertainty are associated with PTG positively. Results also show that participants with high loss scores report significantly higher PTG. These variables may be sources of distress as death anxiety, intolerance of uncertainty, and loss experiences are known to be associated with distressing emotions. Therefore, these may be potential triggering factors for growth as the person struggles with highly distressing emotions during the pandemic. However, it may also be the case that reporting growth while experiencing high loss, death anxiety, and intolerance of uncertainty may be an indication of a coping mechanism or potential illusory growth. As it is not possible to know whether growth really took place during the pandemic, no causality or directionality may be inferred. However, it should be noted that there is a possibility that reporting growth during a struggle with loss, death anxiety, and uncertainty intolerance may also be a sign of ongoing struggle rather than a real constructive growth.

In this study, meaning in life was hypothesized to correlate negatively with posttraumatic stress, death anxiety, and intolerance of uncertainty. However, meaning in life construct consists of existing meaning and search for meaning which are negatively correlated. Therefore, our hypotheses might be formed by taking "existing meaning in life" into account more than the "search for meaning in life" component. However, results support that meaning in life correlates positively with

these constructs, whereas existing meaning in life correlates negatively, and search for meaning in life correlates positively. When these two subscales are taken into account, our results turn out to be meaningful. Therefore, we utilized these two subscales in our research as they provide reliable results. So, the confusion and unexpected correlation regarding meaning in life may be more related to a psychometric factor than something else. It is suspected that the dominance of search for meaning in life may be larger than existing meaning in life subscale, which influence the correlation between meaning in life and other variables.

4.3 Regression Analyses

In the literature, certain contributing factors of PTG are acknowledged such as extraversion, openness to experience, agreeableness, conscientiousness, hardiness, emotional stability, optimism, social support, rumination, and specific coping mechanisms such as acceptance, positive reframing, and turning to religion (Joseph et al., 2012; Linley & Joseph, 2004; Tedeschi & Calhoun, 2004). Beyond these findings, it was hypothesized that posttraumatic stress, death anxiety, intolerance of uncertainty, meaning in life, and loss will predict posttraumatic growth. Results showed that posttraumatic stress, search for meaning in life, existing meaning in life, and loss predict PTG. This result is consistent with the literature. However, death anxiety and intolerance of uncertainty are not found to be predicting PTG. Therefore, our main hypothesis was partially supported. Results will be discussed in detail according to the literature.

Considering religiosity to be related to meaning in life, intolerance of uncertainty, experiences of loss, death anxiety, and growth enables to see how it is related to and predictive of PTG. As control variables, religiosity and age may have crucial role in clarifying the relationship between the predictor variables and PTG. With this insight, perceived religiosity was taken as a control variable to reduce the influence of residuals and increasing the success of predictive power in the study.

In our study, meaning in life is found to predict PTG. Schnell and Krampe (2020) suggest that meaning in life is considered as a coping and resilience factor.

Pino et al. (2022) discuss that as meaningfulness reduced mental distress, adverse life events and stressors may be seen as challenges rather than harmful threats. Even though there is lacking understanding regarding how meaning is constructed during the pandemic, Prieto-Ursúa & Jódar (2020) recently found that religion, spirituality, and meaning is associated with PTG. Similarly, Casali et al. (2021) report that zest, love, gratitude, and spirituality is associated with PTG in the literature. It is understandable that ways of conveying meaning and making sense of what is happening predicts growth. As significance, purpose, and goal of life may be impacted by the pandemic negatively (De Jong et al., 2020; Martela & Steger, 2016), finding sources of meaning (Van Tongeren & Green, 2010) may bring a sense of relief.

More specifically, it is seen that both search for meaning and existing meaning in life are predictive of PTG. This is complementary to the findings in the literature. Even though they are negatively correlated, both variables seem to predict PTG. Existing meaning in life may be present during the pandemic or may be constructed during the pandemic as a result of consistent engagement with the distressing emotions and cognitive processing of highly stressful experiences (Tedeschi & Calhoun, 2004). However, search for meaning is an indicator that the traumatic distress is still present, and the person is showing efforts to regain meaning in life. Even though search for meaning is associated with distressing emotions in the literature, search for meaning is an essential process for construction of a new meaning and PTG to occur (Linley & Joseph, 2011). Therefore, search for meaning and presence of distressing emotions are highly unlikely to rule out the experience of growth, as our results also revealed.

In our study, posttraumatic stress symptoms were predicting PTG. As proposed by Tedeschi and Calhoun (2004), the functional descriptive model of PTG consists of traumatic distress as its component. Distress is seen as the fuel for PTG process and processing of highly stressful event is expected to trigger distress (Hyun et al., 2021; Tedeschi & Calhoun, 2004). Some research also found stress levels and trauma symptomatology to be predictors of PTG (Hallen & Godor, 2022; Yan et al., 2021). These results are in alignment with the findings that positive and negative

posttraumatic reactions may coexist (Shakespeare-Finch & Lurie-Beck, 2014; Yan et al., 2021). Additionally, it may also be expected to see an increase in functioning and adaptation as a result of positive psychological change associated with the process of PTG (Shakespeare-Finch et al., 2013). Our result is in alignment with the view that positive and negative human experiences form the experience of being human (Wong, 2011), and that presence of positive emotions accompanying negative stressful emotions may be even more crucial and significant as a buffering force for psychological well-being (Israelashvili, 2021).

Significant losses such as losing a loved one or losing something of importance may accompany PTG (Eisma et al., 2019). Losses may create great distress, sense of meaninglessness, and need for adaptation, which might be a catalyst for growth (Davis et al., 2007). A study conducted at 3 waves of the pandemic revealed that loss of resources (such as material, social or personal characteristics) is a predictor of PTSS during the pandemic (Cohen & Yagil, 2022). In our study, loss is found to be a predictor of PTG. A variety of losses such as losing a loved one, job, social role, social ties, assumptions in life, and many more might be experienced during the COVID-19 pandemic (Zhai & Du, 2020). It was considered that experience of loss may exacerbate the distress during the pandemic, and vice versa. Most of the losses reported during the pandemic may be related to loss of material, spiritual, or personal values rather than losing a loved one. Therefore, distressing emotions may also be playing a role in the perception of losses experienced during the pandemic, which is worthy of consideration.

While interpreting results regarding the loss variable, current economic crisis in Turkey should also be acknowledged. As previously stated, perceptions of loss is not specified in this study due to the aim of measuring the subjective perception of loss experienced during the pandemic. Therefore, loss may include loss of a loved one, feeling, job, education, psychological state, social role, social tie, money and so on. Economic recession associated with COVID-19 pandemic includes unemployment, supply crisis, panic buying, increase in price of energy and food, and bankruptcies. Other than the impact of COVID-19 pandemic on economy, Turkey is also facing a currency and debt crisis characterized by loss of value in Turkish

currency, extreme inflation rates, rising unemployment, rising borrowing costs and loan defaults (Akçay, 2020; Altınörs & Akçay, 2022). In essence, these economic problem brought unemployment, job losses, reduced wage rates, loss of purchasing power, and loss of trust in government (Steinberg, 2022). Akyuz et al. (2020) discuss that suicide rates show an increase in Turkey and that suicide rates are positively associated with unemployment and negatively associated with income in Turkey. It seems that increased poverty, homicide rates, and suicides are partially associated with inflation, increased costs of living, inability to pay bills, inability to provide resources to kids, and increasing debts (Akyuz & Karul, 2022; Elgin, 2019). Even though it was intended to measure the impact and context of COVID-19 pandemic by our questionnaires, ongoing economic crisis in Turkey is expected to have an inevitable impact on perception of loss.

Contrary to our expectations, intolerance of uncertainty and death anxiety were not found to be predictors of PTG. However, this expectation was not derived from the literature, but was formed by taking the characteristics of the pandemic into consideration. It is speculated that there might also be underlying factors in the relationship between distress and growth. As they are two transdiagnostic factors found in several mental health conditions as well as in normal population to a variety of extent (Çelik et al., 2021; Menzies & Menzies, 2020), death anxiety and intolerance of uncertainty are crucial therapeutic themes to be concerned about. More research is required to understand how these constructs may be playing a role in the relationship between distress and growth. It is recommended that uncertainty tolerance and anxiety towards death are taken into consideration while approaching personal distress, protective factors, resilience, and growth. Uncertainty and fear of death may be latent or underlying factors that are triggered on a less conscious level with little to no awareness. Therefore, these themes may be harder to capture with questions yet still may be underlying factors to interact with how people experience and react to the pandemic stressor. Furthermore, intolerance of uncertainty is characterized by avoidance, decreased functioning, and increased stress (Buhr & Dugas, 2002). Death anxiety is also known to be a driving force associated with efforts to defend meaning in life (Menzies & Menzies, 2020; Van Tongeren & Green, 2010). Taken together, people who experience higher death anxiety and

intolerance of uncertainty are found to report higher posttraumatic distress, search for meaning in life, and PTG. It is unknown whether the growth reported by participants with higher anxiety is attributed to the real and constructive growth and not to the more defensive and illusory side of growth. It is interesting to see that higher death anxiety and intolerance of uncertainty is associated with higher PTSD symptoms, search for meaning, and PTG. Even though higher distress, higher search for meaning, and lower existing meaning in life is expected and found in this study, higher PTG result was highly unexpected. As mentioned before, these correlations may be associated with increase in distressing emotions and higher search for meaning associated with death anxiety and intolerance of uncertainty. As a result of this process, PTG may be reported. However, intolerance of uncertainty and death anxiety is associated negatively with existing meaning in life, even though growth is expected to accompany higher existing meaning in life. This expectation derives from the fact that meaning making is an important agent of the PTG process (Tedeschi & Calhoun, 2004). Therefore, reconstruction of new schemas and assumptive world that are adaptive and flexible enough is expected as people make sense of the new reality the traumatic event introduced into their lives.

It should be noted that not all people who experience a traumatic event report growth. Trauma is usually followed by either a process of accommodation (revision of existing schemas to accommodate the new trauma information) or assimilation (revising the traumatic memory to fit it into the current schemas). While the former is the route of growth, the latter is accepted to be dysfunctional. When trauma is not processed and meaning is not driven, the assumptive world is left shattered and the previous schemas are retained without further processing, leaving the person vulnerable for future trauma. Therefore, assimilation is not followed by growth. Additionally, accommodation may be accompanied with psychopathology rather than a positive schema change when the processing ends up with a negative accommodation such as "the world is a dangerous place, people are not to be trusted, I am doomed to experience abusive relationships, bad things will always happen to me and I will not be able to cope, I deserve to be hurt" (Joseph & Linley, 2005). Consequently, growth measured in this study corresponds to positive accommodation rather than other types of post-trauma reactions.

Taken together, experiences and influences of loss on participants, meaning in life (search for meaning in life and existing meaning in life), and posttraumatic stress are found to predict PTG during the COVID-19 pandemic. It may be important to note that since social support is one of the strongest predictors of growth stated in the literature (Hallen & Godor, 2022), disruption of social life due to the pandemic may be seen as an additional factor that may have certain drawbacks on the process of PTG. Our results support the view that positive and negative posttraumatic reactions may coexist. It is encouraged to focus on the predictors of PTG that are found in this study and the literature to promote growth and well-being during and after traumatic events. Additionally, more research is required to understand how intolerance of uncertainty and death anxiety may be contributing to the picture, if they do so.

4.4 Clinical Implications

Trauma and disasters are known to have long-term influences on individuals and populations. COVID-19 is specifically the most global and long-term occurrence among other disasters (Hyun et al., 2021; Polizzi et al., 2020; Vindegaard & Benros, 2020). Understanding short-term and long-term influences of COVID-19 on people is specifically important. From our point of view, understanding protective factors is as important as understanding risk and vulnerability factors. Thus, it should be prioritized to gain insight about protective factors during such crises. This research focuses on PTG and PTSD symptoms simultaneously, which gives insight about the spectrum of posttraumatic reactions.

Existential therapy and existential positive psychology are particularly interested in concepts such as death, isolation, freedom, meaning, loss, and the integration of positive and negative human experiences. During crisis like COVID-19, existential concepts gained even more importance, as they seemed to invoke greater terror and conflict. This research aimed to raise some curiosity regarding these important matters. Hopefully, more studies will focus on existential themes, the pandemic, and potential losses and gains that are associated with the pandemic in short and long-term. Follow-up studies are also encouraged to ensure long-term monitoring of the concepts of interest.

From our view, this research and following research can give some insights and guidance regarding where to put emphasis on and intervene during crisis situations. Even though this pandemic is a unique stressor, results of these studies can also give insights regarding some other disasters or potentially traumatic occurrences. Results of this study can be utilized in clinical settings as well as public health institutions that may focus on protective factors and preventative measures regarding mental health. Focusing on distressing mental health symptoms as well as protective factors can be more comprehensive and effective to maintain and promote mental health of public and vulnerable populations. Therefore, focusing on potential predictors of posttraumatic growth, emphasis on meaning in life, posttraumatic stress symptoms, experiences of loss, and religiosity as well as specific emphasis on development of other relevant protective factors may be advised for dealing with psychological distress. As the importance of meaning in life and balance between positive and negative emotions gain importance in crisis situations, coping strategies can be integrated in therapy to target promoting purpose, significance, and coherence to ensure the protective and buffering effect of meaning in life on lives of clients. Existential therapies may be utilized to understand how meaning, death, loss, uncertainty, freedom, isolation, and other existential themes may gain importance during uncertain and uncontrollable life events. Cognitive-behavioral therapy, acceptance and commitment therapy, existential and meaning-centered approaches may promote an understanding regarding how developing meaning in life may contribute to the well-being of individuals during and after stressful and traumatic events. These findings may aid the clinical practices regarding grief and trauma-related conditions, as well as promoting well-being with emphasis on protective factors and coping resources in the general and vulnerable populations.

4.5 Limitations of the Study

This study has several limitations that are noteworthy. It is not possible to know what pre-pandemic, beginning of the pandemic, midst of the pandemic, and post-pandemic results would look like due to the design of this study. This cross-sectional research provides a snapshot of a moment in time rather than a dynamic flow or continuum in time. Longitudinal design would enable a more comprehensive

picture regarding how meaning making, death anxiety and growth after trauma would change in time at different stages of the pandemic. Additionally, as the pandemic is an ongoing process that seems to be far from ending soon, it is debatable whether peritraumatic growth or posttraumatic growth was captured in this study. Similar research could be conducted which measures before, during, and after the pandemic to ensure a more holistic view and less confounded analysis regarding the traumatic and growth-related variables and how they change over time. Importantly, even though it was intended to capture the pandemic in this study, it is not possible to attribute any result of this study to the process and stressor of the pandemic itself, without controlling for other variables and designing a controlled longitudinal study.

Additionally, another variable to measure psychological well-being can be helpful to measure how PTG associates with well-being. Coping, schemas, self-reflection, and rumination measurements may tap upon the underlying mechanism and model of PTG. This approach may also be helpful when understanding how PTG is associated with different measures of mental health (psychopathology and well-being measurements).

There are some limitations related to generalizability of our results as well. As this study benefits from online data collection strategies with its practical value and feasibility during the pandemic, potential disadvantages it may pose should be acknowledged. It is obvious that people who have no access to or interest in using smartphones or computers due to variety of reasons were missed due to the online nature of the data collection. This study may also lack representativeness of Turkey as most of the participants were from the Western region of Turkey. Method of data collection may also play an important role in impacting the generalizability of our results. Convenience sampling and snowball technique were utilized in this study, which have their own pros and cons. Replication of these variables with a random sample is needed for better generalizability. Additionally, due to the gender imbalance (female to male ratio is 7:3) in our sample, it is not ideal to make any inferences about gender differences. Additionally, trauma types vary widely across studies such as sudden, short-term, long-term, repetitive, foreseeable, and so on. The

results of this study shouldn't be generalized to other traumatic events without considering the characteristics and type of the traumatic event of interest.

The ongoing debate regarding the constructive (real) growth versus illusory growth distinction can be tackled by longitudinal designs, which measures pre and post trauma to detect PTG. Since this study is cross-sectional, it is not possible to ensure that the change participant reports are real changes that are objectively measurable or to infer any causality. PTG can be functioning as a coping mechanism, social desirability response, recall error or a real growth. Shakespeare-Finch et al. (2013) acknowledges that some studies doubt the validity of PTGI and claim that the scale measures perceptions of growth rather than actual growth. Self-report can be misleading especially when measuring a construct like PTG. Literature shows that the issue of illusory growth can be of concern and would be hard to detect unless additional measures are done. PTGI as a measurement of PTG is criticized for being suitable for Western cultures, rather than less individualistic and more collectivistic cultures. Many studies reveal the importance of culture in relation to different PTG domains (Cheng & Liu, 2021). If there is a collectivistic growth component apparent in non-Western cultures, this particular study may be lacking such measurement component. This study combined psychopathological approach and existential approach as much as possible. However, this effort comes with its weaknesses and drawbacks. Understandably, this study may lack the general consistency and coherence a single approach would provide. Therefore, our methodology and concepts of interest may sound contradictory at times. However, utilizing standardized and reliable measurements and a focus on existential themes are integrated as much as possible. Joseph (2019) proposes that self-report can be prone to issues when measuring growth but when this happens, it is usually a matter of measurement problem rather than an issue with the concept. Author also proposes that medical model and humanistic psychology can sometimes be mixed by imposing PTSD to the PTG. When PTSD is imposed to the study, the research tends to accept the medical model and its assumptions, which can suggest PTSD and PTG to be mutually exclusive. Thus, PTS can be seen less of an outcome and more of a process that is crucial for PTG to occur. In this study, the coexistence of PTS and PTG is acknowledged, even though measurement of PTSD is based on a standardized scale.

Even though perceived amount of gain and perceived influence of gain during the pandemic was asked to participants just like the perceived loss measurements, these two questions related to gain were not included in the analysis. Gains experienced during the pandemic are considered to be captured more reliably by the PTGI. Therefore, this unstandardized Likert question is not analyzed and interpreted.

Additionally, perceived loss and perceived religiosity needs to be measured by a more comprehensive and validated tool to ensure reliability. As most of the measurements tap upon the loss of a person rather than other material or abstract losses, loss was measured by the perceived amount and impact of loss dimensions on a Likert scale. Using a Likert scale and not a standardized measurement tool comes with its limitations. It is acknowledged that participants may perceive variety of losses during the pandemic. Our research doesn't specify the type of loss participants report and focuses on the subjective experience of loss more than its type. Therefore, severity and impact of loss were measured with the general focus on the experience of loss. Therefore, different types of losses are not captured separately in this study, which is a limitation. More abstract types of losses such as loss of normalcy, motivation, social roles may not be readily and easily perceived and processed by participants as much as loss of a loved one. Depending on the researcher and purpose, other theoretical approaches may also be utilized to conceptualize, measure, and interpret results.

As mentioned previously, there is an economic recession in Turkey. As this research haven't specified the type of loss people perceived, the economic atmosphere may also be impacting responses associated with losses. Loss questions (as well as other measurements) were asked by specifically priming the pandemic context and its associated influences. However, we acknowledge that people may be impacted by the economic atmosphere regardless. Therefore, the reported losses during the pandemic may be confounded by the economic crisis in Turkey. This should be kept in mind while interpreting the results as it is not possible to attribute the loss participants report to the pandemic solely.

4.6 Strengths of the Study

The pandemic is a naturalistic environment as the stressor is not experimentally induced. PTGI targeting the pandemic is a good setting in terms of uniformity of the stressor that is being measured, rather than measuring drastically different types of traumas people had in their lifetime. As different types of traumas would suggest variances of the type of trauma, intensity of traumatic event, the exposure, occurrence frequency, the duration, the proximity of the trauma, controllability, the natural or human-made nature and many other variables. It seems like a more controlled and naturalistic approach to measure a global event. With this respect, Impact of Event Scale enables us to see how the uniform stressor of COVID-19 can be experienced differently by individuals in terms of trauma response and how it can be related with PTG. As traumatic events, reminders of death and uncertainty were the main characteristics of this pandemic, the context in which this research was made sense naturally.

Even though this research is conducted 2 years after the pandemic started, this can be considered as a strength as posttraumatic growth is the interest of this study. Initial phases of pandemic such as the lockdown are more investigated. Additionally, some variables like PTG require sufficient time to pass for the person to examine core beliefs, to put things into perspective and to go through the acute phase. PTG can sometimes be used by itself as a coping mechanism with a stressor, meaning it may be a way to defend, rather than an outcome and growth. This time frame may be especially useful for dealing with such illusory growth confounds to an extent. Given the fact that PTG and PTS usually requires some time to unfold after the exposure to a traumatic event, the timing of this study seems relevant, regardless of the idea that COVID-19 is a prolonged and repetitive stressor.

4.7 Future Directions

As post-trauma reactions can be negative, positive, and somewhere in between, qualitative questions can be proposed to measure any changes due to the pandemic. Open-ended questions can ensure that people are not primed to answer in a certain way, and they can express both positive and negative changes freely, which could

give a more comprehensive or unbiased picture. Absence of negative or positive change can give better insights about how participants experience the traumatic event.

Future studies should focus more on PTG in addition to the negative side of trauma. Psychometric studies and control mechanisms to distinguish real and illusory growth is needed. Longitudinal studies can help with detecting the real influence of trauma on PTG, by measuring pre-trauma and post-trauma conditions. This research design may provide insight regarding how different stressors can be associated with different growth patterns or domains (such as the pandemic and interpersonal violence such as rape). Aside from longitudinal designs, pre-trauma and post-trauma measurements would enable researchers to avoid retrospective self-reports, which can be prone to errors. Studies that will measure both illusory and real nature of PTG are needed. Then, it might get a bit clearer how the growth and illusory/defensive side comes together to shape PTG as a whole, or as contradictory forces. Also, more implicit or objective measurements of growth may aid the distinction of real versus illusory growth in future studies to avoid defensiveness or subjectivity to an extent.

Future research may focus on how meaning is derived or maintained by individuals, what are the sources of meaning, how religiosity fits into the picture from a meaning making perspective, and how all of these may be aiding growth and interacting with posttraumatic stress. Also, understanding the different functions of meaning making efforts and process (such as coping with stress or construction of new schemas) is also crucial to understand how various efforts of meaning making may contribute to real or illusory growth individuals experience.

Other existential concepts such as isolation and freedom can also be fruitful research areas during the pandemic. Additionally, transdiagnostic factors such as intolerance of uncertainty and death anxiety may be important to assess and work on especially in these uncertain and life-threatening conditions. To capture the model of PTG, further research might focus on rumination, social support, coping strategies, and other possible contributing factors of PTG. Variety of coping strategies such as emotion-focused, problem-focused, and meaning-focused are associated with PTG.

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Future studies may focus on how different coping strategies relate to different traumatic events with completely different psychological demands (requiring problem-solving, emotion-regulation, acceptance and so on). For instance, as schema change is expected to occur during the process of growth, future study may investigate which schemas are having modifications because of a traumatic event and which adaptive changes take place during and after the process of growth. As growth is seen as a process and outcome, follow-up studies may examine how PTG varies in time and whether it has protective role for potential future stressors. Further clinical research devoted to ACT, CBT, mindfulness, and existential therapy protocols may give more insight regarding how certain protective factors and risk factors may interact with stress or posttraumatic growth under controlled and standardized clinical settings.

4.8 Conclusion

This study aimed to examine the predictors of posttraumatic growth, based on the literature and unique characteristics of the current COVID-19 pandemic in Turkey. This research was specifically interested in predicting PTG with an existential perspective and finding potential contributing factors to understand how growth may also accompany potential negative experiences during the pandemic. It was hypothesized that posttraumatic stress, meaning in life, death anxiety, intolerance of uncertainty, and loss predict posttraumatic growth. This hypothesis is partially supported as posttraumatic stress, existing meaning in life, search for meaning in life, and loss is found to predict PTG. Furthermore, religion was found to be a predictor of PTG, which was controlled in this study. As this research was concerned more about existential themes and individual characteristics as predcitors of the PTG during the pandemic, our results may not always be comparable to those in the literature. However, our findings are mostly in alignment with the literature. Additional research is required to understand potential predictors of PTG, characteristics of growth, and the mechanisms underlying the stress and growth reactions during the pandemic. This study and further research may contribute to the trauma and mass trauma literature, enabling us to understand potential protective and preventive factors that may lead to growth during a global traumatic event such as

the pandemic. Such interest may enrich implications in clinical settings and preventive strategies as well as broadening our understanding of populations that seem to be at risk during a global event of pandemic. Understanding long-term influences of the pandemic, detecting the vulnerable populations, developing specific strategies of intervention, and enriching the understanding of existence of post-trauma reactions as well as existential struggles during and post-pandemic is considered to be crucial for coping with the current pandemic and potential stressful events in the future.

REFERENCES

Ahmed, M. Z., Ahmed, O., Aibao, Z., Hanbin, S., Siyu, L., & Ahmad, A. (2020). Epidemic of COVID-19 in China and associated psychological problems. *Asian Journal of Psychiatry*, *51*, 1–7. https://doi.org/10.1016/j.ajp.2020.102092

Akbar, Z., & Witruk, E. (2016). Coping Mediates the Relationship Between Gender and Posttraumatic Growth. *Procedia - Social and Behavioral Sciences*, *217*, 1036–1043. https://doi.org/10.1016/j.sbspro.2016.02.102

Akçay, Ü. (2020). Authoritarian consolidation dynamics in Turkey. *Contemporary Politics*, *27*(1), 79–104. https://doi.org/10.1080/13569775.2020.1845920

Akyuz, M., & Karul, C. (2022). The effect of economic factors on suicide: An analysis of a developing country. *International Journal of Human Rights in Healthcare*, 1–10. https://doi.org/10.1108/IJHRH-03-2022-0023

Akyuz, M., Karul, C., & Nazlioglu, S. (2020). Dynamics of suicide in Turkey: An empirical analysis. *Eastern Mediterranean Health Journal*, *26*(10), 1184–1192. https://doi.org/10.26719/emhj.20.033

Allan, B. A., Duffy, R. D., & Douglass, R. (2015). Meaning in life and work: A developmentalperspective. *The Journal of Positive Psychology*, *10*(4), 323–331. https://doi.org/10.1080/17439760.2014.950180

Altınörs, G., & Akçay, Ü. (2022). Authoritarian neoliberalism, crisis, and consolidation: the political economy of regime change in Turkey. *Globalizations*, 1–26. https://doi.org/10.1080/14747731.2021.2025290

American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). https://doi.org/10.1176/appi.books.9780890425596

Anderson, E. C., Carleton, R. N., Diefenbach, M., & Han, P. K. J. (2019). The relationship between uncertainty and affect. *Frontiers in Psychology*, *10*. https://doi.org/10.3389/fpsyg.2019.02504.

Arslan, G., Yıldırım, M., Karataş, Z., Kabasakal, Z., & Kılınç, M. (2020). Meaningful Living to Promote Complete Mental Health Among University Students in the Context of the COVID-19 Pandemic. *International Journal of Mental Health and Addiction*, 930–942. https://doi.org/10.1007/s11469-020-

00416-8

Asmundson, G. J. G., Paluszek, M. M., & Taylor, S. (2021). Real versus illusory personal growth in response to COVID-19 pandemic stressors. *Journal of Anxiety Disorders*, *81*. https://doi.org/10.1016/j.janxdis.2021.102418

Bakioğlu, F., Korkmaz, O., & Ercan, H. (2020). The fear of COVID-19 raises the level of depression, anxiety and stress through the mediating role of intolerance of uncertainty. *International Journal of Mental Health and Addiction*, 1–14. https://doi.org/10.1007/s11469-020-00331-y

Bavolar, J., Kacmar, P., Hricova, M., Schrötter, J., Kovacova-Holevova, B., Köverova, M., & Raczova, B. (2021). Intolerance of uncertainty and reactions to the COVID-19 pandemic. *Journal of General Psychology*, 1–28. https://doi.org/10.1080/00221309.2021.1922346

Becker, E. (1973). *The denial of death.* The Free Press.

Blanuša, J., Barzut, V., & Knežević, J. (2020). Direct and indirect effect of intolerance of uncertainty on distress during the COVID-19 pandemic. *Primenjena Psihologija*, *13*(4), 473–487. https://doi.org/10.19090/PP.20.4.473-487

Boehm-Tabib, E., & Gelkopf, M. (2021). Posttraumatic growth: A deceptive illusion or a coping pattern that facilitates functioning? *Psychological Trauma: Theory, Research, Practice, and Policy*, *13*(2), 193–201. https://doi.org/10.1037/tra0000960

Buhr, K., & Dugas, M. J. (2002). The intolerance of uncertainty scale: Psychometric properties of the English version. *Behavior Research and Therapy*, *40*(8), 931–946. https://doi.org/10.1016/s0005-7967(01)00092-4.

Bukhari, S. R., & Asim, S. (2021). Death Anxiety in General Public during the time of. *Pakistan Journal of Medical Research*, *60*(2), 74–79. https://pjmr.org.pk/index.php/pjmr/article/view/168

Carleton, R. N., Norton, M. A. P. J., & Asmundson, G. J. G. (2007). Fearing the unknown: A short version of the Intolerance of Uncertainty Scale. *Journal of Anxiety Disorders*, *21*(1), 105–117. https://doi.org/https://doi.org/10.1016/j.janxdis.2006.03.014

Carr, D., Boerner, K., & Moorman, S. (2020). Bereavement in the Time of Coronavirus: Unprecedented Challenges Demand Novel Interventions. *Journal*

of Aging & Social Policy, *32*(4–5), 425–431.
https://doi.org/10.1080/08959420.2020.1764320

Casali, N., Feraco, T., & Meneghetti, C. (2021). Character strengths sustain mental
health and post-traumatic growth during the COVID-19 pandemic. A
longitudinal analysis. *Psychology and Health*, 1–17.
https://doi.org/10.1080/08870446.2021.1952587

Chen, C., & Tang, S. (2021). Profiles of grief, post-traumatic stress, and post-
traumatic growth among people bereaved due to COVID-19. *European Journal
of Psychotraumatology*, *12*(1), 1–14.
https://doi.org/10.1080/20008198.2021.1947563

Cheng, L., & Liu, L. (2021). Exploring posttraumatic growth after the COVID-19
pandemic. *Tourism Management*, *90*(5).
https://doi.org/10.1016/j.tourman.2021.104474

Cohen, M., & Yagil, D. (2022). Posttraumatic stress and COVID-19-related
stressors: a prospective observational study. *Anxiety, Stress and Coping*, 1–14.
https://doi.org/10.1080/10615806.2022.2067983

Cox, C. R., Swets, J. A., Gully, B., Xiao, J., & Yraguen, M. (2021). Death Concerns,
Benefit-Finding, and Well-Being During the COVID-19 Pandemic. *Frontiers in
Psychology*, *12*, 1–11. https://doi.org/10.3389/fpsyg.2021.648609

Çelebi, G. Y. (2020). Covid 19 Salgınına İlişkin Tepkilerin Psikolojik Sağlamlık
Açısından İncelenmesi. *IBAD Sosyal Bilimler Dergisi*, *8*, 471–483.
https://doi.org/10.21733/ibad.737406

Çelik, D., Alpay, E. H., Çelebi, B., & Türkali, A. (2021). Intolerance of uncertainty,
rumination, post-traumatic stress symptoms and aggression during COVID-19:
A serial mediation model. *European Journal of Psychotraumatology*, *12*(1), 1–
13. https://doi.org/10.1080/20008198.2021.1953790

Çorapçıoğlu, A., Yargıç, İ., Geyran, P., & Kocabaşoğlu, N. (2006). "Olaylarin etkisi
ölçeği" (IES-R) Türkçe versiyonunun geçerlilik ve güvenilirliği. *Yeni
Symposium*, *44*(1), 14–22.

Davis, C. G., Wohl, M. J. A., & Verberg, N. (2007). Profiles of posttraumatic growth
following an unjust loss. *Death Studies*, *31*(8), 693–712.
https://doi.org/10.1080/07481180701490578

De Jong, E. M., Ziegler, N., & Schippers, M. C. (2020). From Shattered Goals to

Meaning in Life: Life Crafting in Times of the COVID-19 Pandemic. *Frontiers in Psychology*, *11*, 1–6. https://doi.org/10.3389/fpsyg.2020.577708

Demirdağ, S., & Kalafat, S. (2015). Yaşamın Anlamı Ölçeği (YAÖ): Türkçeye Uyarlama, Geçerlik ve Güvenirlik Çalışması. *İnönü Üniversitesi Eğitim Fakültesi Dergisi*, *16*(2), 83–95. https://doi.org/10.17679/iuefd.16250801

Ditlevsen, D. N., & Elklit, A. (2010). The combined effect of gender and age on post traumatic stress disorder: Do men and women show differences in the lifespan distribution of the disorder? *Annals of General Psychiatry*, *9*, 1–12. https://doi.org/10.1186/1744-859X-9-32

Eisenbeck, N., Pérez-Escobar, J. A., & Carreno, D. F. (2021). Meaning-Centered Coping in the Era of COVID-19: Direct and Moderating Effects on Depression, Anxiety, and Stress. *Frontiers in Psychology*, *12*, 1–12. https://doi.org/10.3389/fpsyg.2021.648383

Eisma, M. C., Lenferink, L. I. M., Stroebe, M. S., Boelen, P. A., & Schut, H. A. W. (2019). No pain, no gain cross-lagged analyses of posttraumatic growth and anxiety, depression, posttraumatic stress and prolonged grief symptoms after loss. *Anxiety, Stress and Coping*, *32*(3), 231–243. https://doi.org/10.1080/10615806.2019.1584293

Elgin, C. (2019). Evolution and Predictors of the Homicide Rate in Turkish Provinces: Evidence from Panel Data. *European Journal on Criminal Policy and Research*, *25*(4), 379–390. https://doi.org/10.1007/s10610-018-9389-y

Frankl, V. E. (1992). *Man's Search for Meaning: An Introduction to Logotherapy* (4th ed.). Beacon Press.

Frazier, P., Tennen, H., Gavian, M., Park, C., Tomich, P., & Tashiro, T. (2009). Does Self-Reported Posttraumatic Growth Reflect Genuine Positive Change? *Psychological Science*, *20*(7), 912–919. https://doi.org/10.1111/j.1467-9280.2009.02381.x

Freedle, A., & Kashubeck-West, S. (2021). Core belief challenge, rumination, and posttraumatic growth in women following pregnancy loss. *Psychological Trauma: Theory, Research, Practice, and Policy*, *13*(2), 157–164. https://doi.org/10.1037/tra0000952

Freeston, M. H., Rheaume, J., Letarte, H., Dugas, M. J., & Ladouceur, R. (1994). Why do people worry? *Personality and Individual Differences*, *17*(6), 791–802.

https://doi.org/doi:10.1016/0191-8869(94)90048-5

Freeston, M., Tiplady, A., Mawn, L., Bottesi, G., & Thwaites, S. (2020). Towards a model of uncertainty distress in the context of Coronavirus (COVID-19). *Cognitive Behaviour Therapist*, *13*, 1–15. https://doi.org/10.1017/S1754470X2000029X

Gesi, C., Carmassi, C., Cerveri, G., Carpita, B., Cremone, I. M., & Dell'Osso, L. (2020). Complicated Grief: What to Expect After the Coronavirus Pandemic. *Frontiers in Psychiatry*, *11*, 1–5. https://doi.org/10.3389/fpsyt.2020.00489

Gordon, R. M., Dahan, J. F., Wolfson, J. B., Fults, E., Lee, Y. S. C., Smith-Wexler, L., Liberta, T. A., & McGiffin, J. N. (2021). Existential–Humanistic and Relational Psychotherapy During COVID-19 With Patients With Preexisting Medical Conditions. *Journal of Humanistic Psychology*, *61*(4), 470–492. https://doi.org/10.1177/0022167820973890

Greening, T. (1992). Existential Challenges and Responses. *The Humanistic Psychologist*, *20*(1), 111–115. https://doi.org/10.1080/08873267.1992.9986784

Hallen, R. Van der, & Godor, B. P. (2022). COVID-19 pandemic-related posttraumatic growth in a small cohort of university students: A 1-year longitudinal study. *Psychiatry Research*, *312*, 1–8. https://doi.org/10.1016/j.psychres.2022.114541

Hamama-Raz, Y., Pat-Horenczyk, R., Roziner, I., Perry, S., & Stemmer, S. M. (2019). Can posttraumatic growth after breast cancer promote positive coping? A cross-lagged study. *Psycho-Oncology*, *28*(4), 767–774. https://doi.org/10.1002/pon.5017

Ho, C. S., Chee, C. Y., & Ho, R. C. (2020). Mental Health Strategies to Combat the Psychological Impact of COVID-19 Beyond Paranoia and Panic. *Annals of the Academy of Medicine, Singapore*, *49*(3), 155–160.

Hong, S., Kim, H., & Park, M. K. (2021). Impact of COVID-19 on post-traumatic stress symptoms in the general population: An integrative review. *International Journal of Mental Health Nursing*, *30*(4), 834–846. https://doi.org/10.1111/inm.12875

Horowitz, M., Wilner, M., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective stress. *Psychosomatic Medicine*, *41*(3), 209–218. https://doi.org/https://doi.org/10.1097/00006842-197905000-00004

Hyun, S., Wong, G. T. F., Levy-Carrick, N. C., Charmaraman, L., Cozier, Y., Yip, T., Hahm, H. "Chris," & Liu, C. H. (2021). Psychosocial correlates of posttraumatic growth among U.S. young adults during the COVID-19 pandemic. *Psychiatry Research*, *302*, 1–6. https://doi.org/10.1016/j.psychres.2021.114035

Israelashvili, J. (2021). More Positive Emotions During the COVID-19 Pandemic Are Associated With Better Resilience, Especially for Those Experiencing More Negative Emotions. *Frontiers in Psychology*, *12*, 1–6. https://doi.org/10.3389/fpsyg.2021.648112

Iverach, L., Menzies, R. G., & Menzies, R. E. (2014). Death anxiety and its role in psychopathology: Reviewing the status of a transdiagnostic construct. *Clinical Psychology Review*, *34*(7), 580–593. https://doi.org/10.1016/j.cpr.2014.09.002

Jans-Beken, L. (2021). A Perspective on Mature Gratitude as a Way of Coping With COVID-19. *Frontiers in Psychology*, *12*, 1–7. https://doi.org/10.3389/fpsyg.2021.632911

Joseph, S. (2019). Posttraumatic Growth as a Process and an Outcome: Vexing Problems and Paradoxes Seen From the Perspective of Humanistic Psychology. *Humanistic Psychologist*, *49*(2), 219–239. https://doi.org/10.1037/hum0000156

Joseph, S., & Linley, P. A. (2005). Positive adjustment to threatening events: An organismic valuing theory of growth through adversity. *Review of General Psychology*, *9*(3), 262–280. https://doi.org/10.1037/1089-2680.9.3.262

Joseph, S., Murphy, D., & Regel, S. (2012). An Affective-Cognitive Processing Model of Post-Traumatic Growth. *Clinical Psychology and Psychotherapy*, *19*(4), 316–325. https://doi.org/10.1002/cpp.1798

Kağan, M., Güleç, M., Boysan, M., & Çavuş, H. (2012). Travma Sonrası Büyüme Envanteri 'nin Türkçe Versiyonunun Normal Toplumda Hiyerarşik Faktör Yapısı. *TAF Preventive Medicine Bulletin*, *11*(5), 617–624.

Karaman, İ. G. Y., İnce, F. E., & Yastıbaş, C. (2021). Does pain that does not kill people make them stronger?: Six-month follow-up of healthcare workers during the COVID-19 pandemic. *European Neuropsychopharmacology*, *53*, 583–585. https://doi.org/10.1016/j.euroneuro.2021.10.861

Karancı, A. N., Işıklı, S., Aker, A. T., Gül, E. İ., Erkan, B. B., Özkol, H., & Güzel, H. Y. (2012). Personality, posttraumatic stress and trauma type: factors

contributing to posttraumatic growth and its domains in a Turkish community sample. *European Journal of Psychotraumatology*, *3*(1), 1–15. https://doi.org/10.3402/ejpt.v3i0.17303

Karataş, Z., Uzun, K., & Tagay, Ö. (2021). Relationships Between the Life Satisfaction, Meaning in Life, Hope and COVID-19 Fear for Turkish Adults During the COVID-19 Outbreak. *Frontiers in Psychology*, *12*, 1–9. https://doi.org/10.3389/fpsyg.2021.633384

Kira, I. A., Shuwiekh, H. A. M., Rice, K. G., Ashby, J. S., Elwakeel, S. A., Sous, M. S. F., Alhuwailah, A., Baali, S. B. A., Azdaou, C., Oliemat, E. M., & Jamil, H. J. (2020). Measuring COVID-19 as Traumatic Stress: Initial Psychometrics and Validation. *Journal of Loss and Trauma*, *26*(3), 1–18. https://doi.org/10.1080/15325024.2020.1790160

Koliouli, F., & Canellopoulos, L. (2021). Dispositional optimism, stress, post-traumatic stress disorder and post-traumatic growth in Greek general population facing the COVID-19 crisis. *European Journal of Trauma and Dissociation*, *5*(2). https://doi.org/10.1016/j.ejtd.2021.100209

Korkmaz, H., & Güloğlu, B. (2021). The role of uncertainty tolerance and meaning in life on depression and anxiety throughout Covid-19 pandemic. *Personality and Individual Differences*, *179*, 1–7. https://doi.org/10.1016/j.paid.2021.110952

Krause, N., Pargament, K. I., & Ironson, G. (2018). In the Shadow of Death: Religious Hope as a Moderator of the Effects of Age on Death Anxiety. *Journals of Gerontology*, *73*(4), 696–703. https://doi.org/10.1093/geronb/gbw039

Kruglanski, A. W., Molinario, E., & Lemay, E. P. (2021). Coping with COVID-19-induced threats to self. *Group Processes and Intergroup Relations*, *24*(2), 284–289. https://doi.org/10.1177/1368430220982074

Kul, A., Demir, R., & Katmer, A. N. (2020). Covid-19 Salgını Döneminde Psikolojik Sağlamlığın Yordayıcısı Olarak Yaşam Anlamı ve Kaygı. *Journal of Turkish Studies*, *15*(6), 695–719. https://doi.org/10.7827/turkishstudies.44419

Kunz, S., Joseph, S., Geyh, S., & Peter, C. (2018). Coping and posttraumatic growth: A longitudinal comparison of two alternative views. *Rehabilitation Psychology*, *63*(2), 240–249. https://doi.org/10.1037/rep0000205

Larsen, S. E., & Berenbaum, H. (2015). Are Specific Emotion Regulation Strategies Differentially Associated with Posttraumatic Growth Versus Stress? *Journal of Aggression, Maltreatment and Trauma*, *24*(7), 794–808. https://doi.org/10.1080/10926771.2015.1062451

Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress*, *17*(1), 11–21. https://doi.org/10.1023/B:JOTS.0000014671.27856.7e

Linley, P. A., & Joseph, S. (2011). Meaning in life and posttraumatic growth. *Journal of Loss and Trauma*, *16*(2), 150–159. https://doi.org/10.1080/15325024.2010.519287

Martela, F., & Steger, M. (2016). The three meanings of meaning in life: Distinguishing coherence, purpose, and signiifcance. *The Journal of Positive Psychology*, *11*(5), 1–15. https://doi.org/10.1080/17439760.2015.1137623

Mayer, C. H. (2021). Albert Camus – A Psychobiographical Approach in Times of Covid-19. *Frontiers in Psychology*, *12*, 1–12. https://doi.org/10.3389/fpsyg.2021.644579

Menculini, G., Albert, U., Bianchini, V., Carmassi, C., Carrà, G., Cirulli, F., Dell'osso, B., Fabrozza, M., Perris, F., Sampogna, G., Nanni, M. G., Pompili, M., Sani, G., Volpe, U., & Tortorella, A. (2022). Did we learn something positive out of the COVID-19 pandemic? Post-traumatic growth and mental health in the general population. *European Psychiatry*, *64*(1), 1–27. https://doi.org/10.1192/j.eurpsy.2021.2263

Menzies, R. E., & Menzies, R. G. (2020). Death anxiety in the time of COVID-19: Theoretical explanations and clinical implications. *Cognitive Behaviour Therapist*, *13*, 1–12. https://doi.org/10.1017/S1754470X20000215

Menzies, R. E., Neimeyer, R. A., & Menzies, R. G. (2020). Death Anxiety, Loss, and Grief in the Time of COVID-19. *Behaviour Change*, *37*(3), 111–115. https://doi.org/10.1017/bec.2020.10

Menzies, R. E., Sharpe, L., & Dar-Nimrod, I. (2019). The relationship between death anxiety and severity of mental illnesses. *British Journal of Clinical Psychology*, *58*(4), 452–467. https://doi.org/10.1111/bjc.12229

Mert, A., Arslan, G., & Tagay, Ö. (2021). Coronavirus Stress and Resilience: Exploring the Role of Hope and Meaning in in Life Undergraduate Students.

International Journal of Psychology and Educational Studies, *8*(4), 129–138. https://doi.org/10.52380/ijpes.2021.8.4.575

Mirhosseini, S., Dadgari, A., Basirinezhad, M. H., Mohammadpourhodki, R., & Ebrahimi, H. (2021). The proportion of death anxiety and its related factors during the COVID-19 pandemic in the iranian population. *Family Medicine and Primary Care Review*, *23*(1), 36–40. https://doi.org/10.5114/fmpcr.2021.103154

Molteni, F., Ladini, R., Biolcati, F., Chiesi, A. M., Dotti Sani, G. M., Guglielmi, S., Maraffi, M., Pedrazzani, A., Segatti, P., & Vezzoni, C. (2021). Searching for comfort in religion: insecurity and religious behaviour during the COVID-19 pandemic in Italy. *European Societies*, *23*, 704–720. https://doi.org/10.1080/14616696.2020.1836383

Na, P. J., Tsai, J., Southwick, S. M., & Pietrzak, R. H. (2021). Factors associated with post-traumatic growth in response to the COVID-19 pandemic: Results from a national sample of U.S. military veterans. *Social Science and Medicine*, *289*, 1–8. https://doi.org/10.1016/j.socscimed.2021.114409

Northfield, E.-L., & Johnston, K. L. (2021). "I get by with a little help from my friends": Posttraumatic growth in the COVID-19 pandemic. *Traumatology*, 1–8. https://doi.org/10.1037/trm0000321

Özdemir, F., & Çeviker, G. (2021). COVID-19 Pandemisinde Algılanan Psikolojik Huzursuzluk ve Anlam Bulma: Sosyal Bağlar ve Medya Kullanımı. *Psikiyatride Guncel Yaklasimlar - Current Approaches in Psychiatry*, *13*(Ek 1), 59–72. https://doi.org/10.18863/pgy.898090

Pak, H., Süsen, Y., Denizci Nazlıgül, M., & Griffiths, M. (2021). The Mediating Effects of Fear of COVID-19 and Depression on the Association Between Intolerance of Uncertainty and Emotional Eating During the COVID-19 Pandemic in Turkey. *International Journal of Mental Health and Addiction*, 1–15. https://doi.org/10.1007/s11469-021-00489-z

Palitsky, R., Schmitt, H., Sullivan, D., & Young, I. F. (2021). An Existential Analysis of Responses to the 2020 Coronavirus Outbreak. *Journal of Humanistic Psychology*, *61*(2), 231–243. https://doi.org/10.1177/0022167820946900

Parlapani, E., Holeva, V., Nikopoulou, V. A., Sereslis, K., Athanasiadou, M., Godosidis, A., Stephanou, T., & Diakogiannis, I. (2020). Intolerance of

Uncertainty and Loneliness in Older Adults During the COVID-19 Pandemic. *Frontiers in Psychiatry*, *11*, 1–12. https://doi.org/10.3389/fpsyt.2020.00842

Pino, O., Cunegatti, F., & D'angelo, M. (2022). The Role of Life Meaning in Psychological Distress and Post-traumatic Growth Among Italian First-Aid Volunteers During the COVID-19 Outbreak. *Trends in Psychology*, 1–23. https://doi.org/10.1007/s43076-022-00182-7

Pogorilska, N. I., Synelnykov, R. Y., Palamar, B. I., Tukaiev, S. V., & Nezhyva, L. L. (2021). Features of Psychological Experiences in Severe Quarantine During the Covid-19 Pandemic: the Role of Tolerance for Uncertainty. *Wiadomosci Lekarskie*, *74*(6), 1312–1316. https://doi.org/10.36740/wlek202106104

Polizzi, C., Lynn, S. J., & Perry, A. (2020). Stress and coping in the time of COVID-19: Pathways to resilience and recovery. *Clinical Neuropsychiatry*, *17*(2), 59–62. https://doi.org/10.36131/CN20200204

Prieto-Ursúa, M., & Jódar, R. (2020). Finding Meaning in Hell. The Role of Meaning, Religiosity and Spirituality in Posttraumatic Growth During the Coronavirus Crisis in Spain. *Frontiers in Psychology*, *11*, 1–8. https://doi.org/10.3389/fpsyg.2020.567836

Pyszczynski, T., Greenberg, J., Solomon, S., & Maxfield, M. (2006). On the Unique Psychological Import of the Human Awareness of Mortality: Theme and Variations. *Psychological Inquiry*, *17*(4), 328–356. https://doi.org/10.1080/10478400701369542

Pyszczynski, T., Lockett, M., Greenberg, J., & Solomon, S. (2021). Terror Management Theory and the COVID-19 Pandemic. *Journal of Humanistic Psychology*, *61*(2), 173–189. https://doi.org/10.1177/0022167820959488

Quiroga-Garza, A., Cepeda-Lopez, A. C., Villarreal Zambrano, S., Villalobos-Daniel, V. E., Carreno, D. F., & Eisenbeck, N. (2021). How Having a Clear Why Can Help Us Cope With Almost Anything: Meaningful Well-Being and the COVID-19 Pandemic in México. *Frontiers in Psychology*, *12*, 1–10. https://doi.org/10.3389/fpsyg.2021.648069

Rather, Y. H., Maqbool, M., Mir, Z. S., Wani, F. A., Ann, Q. U., & Banoo, S. (2020). Existential anxiety, depression, anxiety, post-traumatic stress symptoms among patients with COVID-19 infection in Kashmir valley. *Indian Journal of Health and Well-Being*, *11*(10–12), 524–530.

Rodriguez, J. E., Holmes, H. L., Alquist, J. L., Uziel, L., & Stinnett, A. J. (2021). Self-controlled responses to COVID-19: Self-control and uncertainty predict responses to the COVID-19 pandemic. *Current Psychology*, 1–15. https://doi.org/10.1007/s12144-021-02066-y

Russac, R. J., Gatliff, C., Reece, M., & Spottswood, D. (2007). Death anxiety across the adult years: An examination of age and gender effects. *Death Studies*, *31*(6), 549–561. https://doi.org/10.1080/07481180701356936

Sarıçam, H., Erguvan, F. M., Akın, A., & Akça, M. Ş. (2014). The Turkish Short Version of the Intolerance of Uncertainty (IUS-12) Scale: The Study of Validity and Reliability. *Route Educational and Social Science Journal*, *1*(3), 148–157.

Sarıkaya, Y., & Baloğlu, M. (2016). The development and psychometric properties of the Turkish death anxiety scale (TDAS). *Death Studies*, *40*(7), 419–431. https://doi.org/10.1080/07481187.2016.1158752

Sarry, S. M., Anggreiny, N., & Mafaza. (2021). Responding to uncertainty caused by Covid -19. *IOP Conference Series: Earth and Environmental Science*, *708*(1), 1–8. https://doi.org/10.1088/1755-1315/708/1/012095

Satici, B., Saricali, M., Satici, S. A., & Griffiths, M. D. (2020). Intolerance of Uncertainty and Mental Wellbeing: Serial Mediation by Rumination and Fear of COVID-19. *International Journal of Mental Health and Addiction*, 1–12. https://doi.org/10.1007/s11469-020-00305-0

Schaefer, J., & Moos, R. (1992). Life crises and personal growth. In B. A. Carpenter (Ed.), *Personal coping: Theory, research, and application* (pp. 149–170). Praeger.

Schnell, T., & Krampe, H. (2020). Meaning in Life and Self-Control Buffer Stress in Times of COVID-19: Moderating and Mediating Effects With Regard to Mental Distress. *Frontiers in Psychiatry*, *11*, 1–16. https://doi.org/10.3389/fpsyt.2020.582352

Shakespeare-Finch, J., & Lurie-Beck, J. (2014). A meta-analytic clarification of the relationship between posttraumatic growth and symptoms of posttraumatic distress disorder. *Journal of Anxiety Disorders*, *28*(2), 223–229. https://doi.org/10.1016/j.janxdis.2013.10.005

Shakespeare-Finch, J., Martinek, E., Tedeschi, R. G., & Calhoun, L. G. (2013). A Qualitative Approach to Assessing the Validity of the Posttraumatic Growth

Inventory. *Journal of Loss and Trauma*, *18*(6), 572–591. https://doi.org/10.1080/15325024.2012.734207

Shevlin, M., Hyland, P., & Karatzias, T. (2020). Is Posttraumatic Stress Disorder Meaningful in the Context of the COVID-19 Pandemic? A Response to Van Overmeire's Commentary on Karatzias et al. (2020). *Journal of Traumatic Stress*, *33*(5), 866–868. https://doi.org/10.1002/jts.22592

Sommer, J. L., Reynolds, K., El-Gabalawy, R., Pietrzak, R. H., Mackenzie, C. S., Ceccarelli, L., Mota, N., & Sareen, J. (2021). Associations between physical health conditions and posttraumatic stress disorder according to age. *Aging and Mental Health*, *25*(2), 234–242. https://doi.org/10.1080/13607863.2019.1693969

Steger, M. A., Oishi, S., & Kashdan, T. B. (2009). Meaning in life across the life span: Levels and correlates of meaning in life from emerging adulthood to older adulthood. *Journal of Positive Psychology*, *4*(1), 43–52. https://doi.org/10.1080/17439760802303127

Steger, M. F., Frazier, P. A., Kaler, M., & Oishi, S. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, *53*(1), 80–93. https://doi.org/https://doi.org/10.1037/0022-0167.53.1.80

Steinberg, D. A. (2022). How Voters Respond to Currency Crises: Evidence From Turkey. *Comparative Political Studies*, *55*(8), 1332–1365. https://doi.org/10.1177/00104140211060268

Sun, W., Chen, W. T., Zhang, Q., Ma, S., Huang, F., Zhang, L., & Lu, H. (2021). Post-Traumatic Growth Experiences among COVID-19 Confirmed Cases in China: A Qualitative Study. *Clinical Nursing Research*, *30*(7), 1079–1087. https://doi.org/10.1177/10547738211016951

Szepietowska, E. M., Zawadzka, E., & Filipiak, S. (2022). Symptoms of Post-Traumatic Stress Disorder and the Sense of Gains and Losses during the COVID-19 Pandemic: An International Study. *International Journal of Environmental Research and Public Health*, *19*(6), 1–19. https://doi.org/10.3390/ ijerph19063504

Tallman, B. A. (2013). Anticipated posttraumatic growth from cancer: The roles of adaptive and maladaptive coping strategies. *Counselling Psychology Quarterly*,

26(1), 72–88. https://doi.org/10.1080/09515070.2012.728762

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*(3), 455–472. https://doi.org/https://doi.org/10.1002/jts.2490090305

Tedeschi, R. G., & Calhoun, L. G. (2004). TARGET ARTICLE : " Posttraumatic Growth : Conceptual Foundations and Empirical Evidence ". *Psychologicial Inquiry*, *15*(1), 1–18. https://doi.org/0.1207/s15327965pli1501_01

Tiamiyu, M. F., Gan, Y., Kwiatkowski, D., Foreman, K. C., Dietrich, A., Elliott, K., & Elhai, J. D. (2016). Relationships between latent factors of posttraumatic stress disorder and posttraumatic growth. *Journal of Nervous and Mental Disease*, *204*(5), 344–348. https://doi.org/10.1097/NMD.0000000000000490

Tomaszek, K., & Muchacka-Cymerman, A. (2020). Thinking about my existence during COVID-19, I feel anxiety and awe—The mediating role of existential anxiety and life satisfaction on the relationship between PTSD symptoms and post-traumatic growth. *International Journal of Environmental Research and Public Health*, *17*(19), 1–13. https://doi.org/10.3390/ijerph17197062

Tunç, P. (2021). Covid-19 Pandemisinde, Travmatik Stres Belirtileri ve Ontolojik İyi Oluş Arasındaki İlişkide Anksiyetenin Aracı Rolü. *Psikiyatride Guncel Yaklasimlar - Current Approaches in Psychiatry*, *13*(Suppl 1), 40–58. https://doi.org/10.18863/pgy.892821

Turhan, E. H. (2021). Ölüm sosyolojisi ekseninde ölüm kaygısı ve koronavirüs. *HABITUS Toplumbilim Dergisi*, *2*, 85–101.

Van Tongeren, D. R., & Green, J. D. (2010). Combating meaninglessness: On the automatic defense of meaning. *Personality and Social Psychology Bulletin*, *36*(10), 1372–1384. https://doi.org/10.1177/0146167210383043

Van Tongeren, D. R., & Green, J. D. (2018). Meaning and death-thought accessibility. *British Journal of Social Psychology*, *57*(1), 230–239. https://doi.org/10.1111/bjso.12212

Van Tongeren, D. R., Pennington, A. R., McIntosh, D. N., Newton, T., Green, J. D., Davis, D. E., & Hook, J. N. (2017). Where, O death, is thy sting? The meaning-providing function of beliefs in literal immortality. *Mental Health, Religion and Culture*, *20*(5), 413–427. https://doi.org/10.1080/13674676.2017.1355358

Van Tongeren, D. R., & Showalter Van Tongeren, S. A. (2021). Finding Meaning

Amidst COVID-19: An Existential Positive Psychology Model of Suffering. *Frontiers in Psychology*, *12*, 1–10. https://doi.org/10.3389/fpsyg.2021.641747

Vindegaard, N., & Benros, M. E. (2020). COVID-19 pandemic and mental health consequences: Systemic review of the current evidence. *Brain, Behavior, and Immunity*, *89*, 531–542. https://doi.org/10.1016/j.bbi.2020.05.048

Voitsidis, P., Nikopoulou, V. A., Holeva, V., Parlapani, E., Sereslis, K., Tsipropoulou, V., Karamouzi, P., Giazkoulidou, A., Tsopaneli, N., & Diakogiannis, I. (2021). The mediating role of fear of COVID-19 in the relationship between intolerance of uncertainty and depression. *Psychology and Psychotherapy: Theory, Research and Practice*, *94*(3), 884–893. https://doi.org/10.1111/papt.12315

Walsh, F. (2020). Loss and Resilience in the Time of COVID-19: Meaning Making, Hope, and Transcendence. *Family Process*, *59*(3), 898–911. https://doi.org/10.1111/famp.12588

Walton, M. (2020). Post Traumatic Growth during a pandemic: A literature review. *International Journal of Research in Medical and Basic Sciences*, *6*(8), 1–8.

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. *International Journal of Environmental Research and Public Health*, *17*(5), 1–25. https://doi.org/10.3390/ijerph17051729

Weiss, D. S., & Marmar, C. R. (1997). The Impact of Event Scale-Revised. In J. P. Wison & T. M. Keane (Eds.), *Assessing psychological trauma and PTSD* (pp. 399–411). The Guilford Press.

Wong, P. T. P. (2010). Meaning therapy: An integrative and positive existential psychotherapy. *Journal of Contemporary Psychotherapy*, *40*(2), 85–93. https://doi.org/10.1007/s10879-009-9132-6

Wong, P. T. P. (2011). Positive psychology 2.0: Towards a balanced interactive model of the good life. *Canadian Psychology*, *52*(2), 69–81. https://doi.org/10.1037/a0022511

Wong, P. T. P. (2020). Existential positive psychology and integrative meaning therapy. *International Review of Psychiatry*, *32*(7–8), 565–578. https://doi.org/10.1080/09540261.2020.1814703

World Health Organization. (2020). *Mental Health and Psychosocial Considerations During COVID-19 Outbreak*. https://apps.who.int/iris/handle/10665/331490

World Health Organization. (2022a). *WHO Coronavirus (COVID-19) Dashboard*. https://covid19.who.int/

World Health Organization. (2022b). *Coronavirus disease (COVID-19): Vaccines*. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-(covid-19)-vaccines

Wu, D., Yang, T., Hall, D. L., Jiao, G., Huang, L., & Jiao, C. (2021). COVID-19 uncertainty and sleep: the roles of perceived stress and intolerance of uncertainty during the early stage of the COVID-19 outbreak. *BMC Psychiatry*, *21*(1), 1–11. https://doi.org/10.1186/s12888-021-03310-2

Wu, X., Zhou, X., Wu, Y., & An, Y. (2015). The role of rumination in posttraumatic stress disorder and posttraumatic growth among adolescents after the wenchuan earthquake. *Frontiers in Psychology*, *6*, 1–8. https://doi.org/10.3389/fpsyg.2015.01335

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorder*, *277*, 55–64. https://doi.org/10.1016/j.jad.2020.08.001

Yalom, I. D. (1980). *Existential Psychotherapy*. Basic Books.

Yalom, I. D. (2008). *Staring at the sun: Overcoming the terror of death*. Jossey-Bass.

Yan, S., Yang, J., Ye, M., Chen, S., Xie, C., Huang, J., & Liu, H. (2021). Post-traumatic Growth and Related Influencing Factors in Discharged COVID-19 Patients: A Cross-Sectional Study. *Frontiers in Psychology*, *12*, 1–9. https://doi.org/10.3389/fpsyg.2021.658307

Yargıç, İ., Geyran, P., Kocabaşoğlu, N., & Çorapçıoğlu, A. (2004). Bin Dokuz Yüz Doksan Dokuz Marmara Depremi Sonrası Posttravmatik Stres Belirtilerinin Şiddetini Belirleyen Risk Faktörleri: Kesitsel Saha Çalışması. *Yeni Symposium*, *42*(1), 3–8.

Yıldırım, M., & Arslan, G. (2021). A Moderated Mediation Effect of Stress-Related Growth and Meaning in Life in the Association Between Coronavirus Suffering and Satisfaction With Life: Development of the Stress-Related Growth

Measure. *Frontiers in Psychology*, *12*, 1–10.

https://doi.org/10.3389/fpsyg.2021.648236

Yıldırım, M., Arslan, G., & Wong, P. T. P. (2021). Meaningful living, resilience,
affective balance, and psychological health problems among Turkish young
adults during coronavirus pandemic. *Current Psychology*, 1–12.
https://doi.org/10.1007/s12144-020-01244-8

Zhai, Y., & Du, X. (2020). Loss and grief amidst COVID-19: A path to adaptation
and resilience. *Brain, Behavior, and Immunity*, *87*, 80–81.
https://doi.org/10.1016/j.bbi.2020.04.053

Zhao, J., Ye, B., & Ma, T. (2021). Positive Information of COVID-19 and Anxiety:
A Moderated Mediation Model of Risk Perception and Intolerance of
Uncertainty. *Frontiers in Psychiatry*, *12*, 1–8.
https://doi.org/10.3389/fpsyt.2021.715929

Zhen, R., & Zhou, X. (2021). Latent Patterns of Posttraumatic Stress Symptoms,
Depression, and Posttraumatic Growth Among Adolescents During the COVID-
19 Pandemic. *Journal of Traumatic Stress*, *35*(1), 197–209.
https://doi.org/10.1002/jts.22720